Lumleian Lectures

ON

RHEUMATIC FEVER AND VALVULAR DISEASE.

Delivered before the Royal College of Physicians of London on March 23rd, 25th, and 30th, 1909,

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LECTURE II.[1]

Delivered on March 25th.

VALVULAR DISEASE.

MR. PRESIDENT, CENSORS, AND FELLOWS OF THE COLLEGE,—It is remarkable that neither in the notes of the Lumleian lectures of 1616, in which Harvey shows that he had attained the conception of the circulation of the blood, nor in his "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus" of 1628, in which his discovery is fully set forth, is there any allusion to valvular disease. The retardation of the blood in the veins produced by narrowing of the mitral orifice with the consequent dropsy seems to us an illustration of the course of the blood from the right heart through the lungs to the left auricle, and the changes in the pulse produced by disease of the aortic valves demonstrate the continuity of the blood stream from the left ventricle to the remotest arteries, but Harvey does not seem to have noticed the effects on the circulation of any alterations in the valves, or, indeed, any other than the normal condition of the valves. There is only one allusion to disease of the heart, and that an obscure one, in the "De Motu Cordis." Andreas Laurentius is mentioned as quoting the case of a man the left ventricle of whose heart was found post mortem to contain turbid, fœtid, acrid fluid. Laurentius thought that some turbid urine during the patient's life had therefore come from the heart. It seems possible that the disease of which fainting was a symptom may have been ulcerative endocarditis. Harvey evidently was rather incredulous about the observation.

Moses from Pisgah saw the good land which he longed to enter stretched before him, but was never to know its plains and hills, its deserts, its forests, and its towns. So Harvey, having seen clearly the course of the circulation and the precise normal action of the heart, was not permitted to see further into the land of truth he had obtained for mankind, nor was it till nearly a hundred years after he lectured to this College that a knowledge of valvular disease began to grow up.

The belief in the existence of polypus of the heart, about which so much was written in the eighteenth century, shows that the consequences of the doctrine of the circulation of the blood were not grasped for a long time. These polypi, which are very clearly described by Tulpius in 1641, with a beautiful drawing, and some twenty years later in Malpighi's "Dissertatio de Polypo Cordis," were clots sometimes ante-mortem, as in that which was removed from an aneurysm by Borelli, and sometimes post-mortem clots, as in those described as occurring in the right ventricle. Huxham in 1742 described to the Royal Society polypi in the hearts of two sailors in language which shows that he failed to grasp the impossibility of circulation with such obstructions:—

> The polypi were very nearly of the colour of the buff formed on the surface of highly pleuritic or rheumatic blood, when quite cold or rather whiter. They were vastly tough and seemed to be formed of various laminæ very closely connected, though here and there a bloody vein, as it were, was interspersed. They were not only firmly attached to the fleshly columnæ of the heart but were also sunk and inserted strongly into the intercolumniæ or sulci and that even to the very bottom of the ventricules. ..... The polypus taken out of the left ventricle of the same heart was also very considerable and rather more firm and compact than that of the right but of the very same colour, and firmly implanted into the sides of the ventricle quite down to the mucro cordis. Its branches were shot a great way into the subclavian and carotid arteries but very little down the aorta.[2]

Matthew Baillie's demolition of the doctrine of polypi[3] may perhaps be regarded as the final step in the understanding of Harvey's discovery of the circulation:—

> Polypus consists of a mass of coagulable lymph, which fills up some of the large cavities of the heart, particularly the ventricles, and extends into the neighbouring large vessels. ..... In order that the circulation may be carried on it is necessary that the cavities of the heart be free for the transmission of blood, and if any one of its cavities should be plugged up, the circulation would necessarily be stopped altogether. A polypus, however, plugs up the cavity of the heart in which it is formed so entirely as to prevent the circulation. ..... These circumstances seem to contradict strongly the opinion that polypi in general are formed during life.

Thus it took from 1628 to 1795 for Harvey's discovery to be thoroughly understood in the world of medicine. The above passage in Matthew Baillie's "Morbid Anatomy" may be regarded as the final preparation for the accumulation of knowledge on valvular disease. A few observations on disease of the valves may be found in earlier medical books, of which the best is perhaps that of Dr. James Douglas.[4]

> I lately opened a young man in St. Bartholomew's Hospital, that died of the palpitation of the heart, whose violent beating and prodigious subsultory motion for some months before his death, was not only easily felt by laying the hand on the region of the heart, but seen to rise and fall by raising the bed cloaths that covered it, and, which is almost incredible at some times, the trembling and throbbing made such a noise in his breast as plainly could be heard at some distance from his bedside.

After describing an adherent pericardium and the normal right side of the heart, Douglas mentions the increase in size of the left ventricle and says:—

> The valvulæ called mitrales placed at the orifice of this ventricle are much thicker in substance than ordinary. ..... The semilunary valves at the mouth of the aorta ..... were very much preternaturally affected ..... very thick contracted, as it were, and furled together, and of a whitish colour, and in all appearance, if the person had lived longer, they had turned bony or undergone a petrifaction.

Everyone who reads this account will perceive how very near Douglas went to the discovery of the uses of auscultation. The loud noise which was to be heard proceeding from the cardiac region was probably a systolic murmur due to the rigidity of the aortic valves which was discovered post mortem. Huxham, in the paper which I have already quoted, says that in one of the sailors with polypi which he discovered post mortem, "I observed one of the semilunar valves of the aorta beginning to grow bony." There was, however, no real understanding of valvular disease till the time of Laennec and of his school.

I have maintained in my first lecture that endocarditis often producing permanent valvular disease is the central feature of rheumatic fever. What evidence is there of the extent in the heart of this endocarditis? Excluding cases of ulcerative endocarditis, the presence post mortem of disease of the mitral valve is the best obtainable anatomical evidence that the subject of the necropsy has had rheumatic fever. The mitral valve is rarely affected by chronic degenerative change or by syphilis. It may be affected by endocarditis and so deformed in the course of scarlet fever, of gonorrhœa, of influenza, of sepsis, or of pneumonia, but the number of cases due to these conditions taken together is small compared to the number due to the endocarditis of rheumatic fever. This endocarditis sometimes affects a large area of the interior of the heart. A woman, aged 19 years, whom I examined post mortem, was a good example of this. Her heart weighed 19 ounces and the pericardium was universally adherent. The endocardium of the right auricle was normal. The tricuspid orifice was wider than natural; the edge of the valve was greatly thickened and studded on its upper surface with numerous minute growths. One part only was free—a quarter of an inch at the anterior end of that part of the valve which is attached to the ventricular septum. At the root of the cords which proceed from the anterior part of the ventricular septum to the valve were numerous minute growths. The point of origin of this group of cords—they have no projecting musculi papillares—was thickened and these minute growths were on this thickened base and on the lower part of the cords. The other vertical cords showed no thickening, but there were some transverse thickened cords and a little roughness on the under surface of the valve. There was a small linear thickened patch in

[1] Lecture I. was published in THE LANCET of April 24th, 1909, p. 1159.

[2] Philosophical Transactions, vol. xlii., 1744.

[3] Morbid Anatomy.

[4] Philosophical Transactions, 1715.

the right ventricle on the septum. Two of the pulmonary semilunar valves were adherent to one another and on each of these were numerous minute growths and one more prominent one. There were several much thickened patches of endocardium in the left auricle and there was a small rough patch on the auricular septum. The mitral orifice was somewhat dilated. The valve was fringed by a thick border of minute growths and all the tendinous cords were thickened. There was a general thickening of the aortic flap of the mitral valve. On the upper and anterior part of the ventricular septum in the left ventricle there was a thickened patch as large as a silver penny of Queen Victoria. The aortic valves were incompetent, each had numerous thickly-set small growths on the outer surface below the edges of the valves and with a connecting fringe of growths from valve to valve. In the hollows between the valves there were also minute growths. The valves were adherent to one another and were slightly everted. There were no signs of ulceration in the endocardium and no emboli in the viscera. This was an example of very widespread endocarditis. Taking 20 other cases (ten males and ten females) examined by me post mortem in which there was a probable history of rheumatic fever, as they came in my notebook, the following was the evidence of the area of endocardium affected:—

Males.

10. Right auricle thickened patches, tricuspid, mitral, wall of left ventricle, aortic valves showing thickening.
19. Tricuspid, mitral, aortic valves showing signs of old endocarditis.
19. " " " " " " " "
21. " " " " " " " "
24. " " " " " " " "
27. Tricuspid, wall of right ventricle, mitral, showing signs of old endocarditis.
28. Mitral, wall of left auricle, showing signs of old endocarditis.
31. Mitral, aortic valves showing signs of old endocarditis.
35. " " " " " " "
37. Tricuspid, mitral, wall of ventricle, aortic valves showing signs of old endocarditis.

Females.

5. Tricuspid, mitral thickened.
8. Left auricle, mitral, left ventricle, aortic thickened.
15. Mitral valve deformed.
16. " " "
20. Wall of right auricle, tricuspid, wall of right auricle, mitral thickened.
20. Mitral, wall of left ventricle, aortic valve deformed.
21. Mitral, aortic valve deformed.
21. Left auricle, mitral, aortic valve deformed.
29. Mitral, inside of outer wall of ventricle, valve deformed.
44. Tricuspid, right ventricle, left auricle, mitral valve deformed.

In none of the males were the signs of endocarditis confined to a single region, and in only two of the females was the mitral valve the only affected area. The first case shows how very widespread an endocarditis may be in rheumatic fever, and the others support the view that endocarditis tends to be widespread on the left side of the heart and sometimes extends to the right side.

Specimens of hearts are now gradually accumulating in museums in which naked-eye appearances resembling those of the endocarditis of rheumatic fever are proved to be due to various bacilli. Thus, in a male patient, aged 39 years (under the care of my colleague, Dr. J. A. Ormerod), who was ill for three months and whose necropsy I happened to witness, extensive recent endocarditis involving the mitral valve was found and gonococci were cultivated from the growths. The patient had died from endocarditis, which was a part of gonorrhœa. Here is the heart. There are large, soft, recent growths on the aortic valves with considerable destruction. In another heart showing endocarditis belonging to our collection at St. Bartholomew's Hospital, which I show you, a pneumococcus was cultivated from the growths, and in another the bacillus coli was found in abundance in the endocardium. The history of a few cases in my wards in which valvular disease due to an acute endocarditis was found and in which the only acute disease of the patient's past history was small-pox, added to the fact that pericarditis occurs in small-pox, makes it seem probable that an endocarditis may sometimes be due to the organism of variola. A passage in the Loimologia[5] of Dr. Nathaniel Hodges may, perhaps, point to what is in itself likely, the occurrence of endocarditis in plague:—

> I was sent for to a youth of about 14 years of age who had continued free of the infection, after his mother and the rest of the family had been visited by it, when all on a sudden he was seized with such a palpitation at heart that I and several others could hear it at some considerable distance, and it continued so to do till he died, which was soon after.

[5] Second edition, London, 1720.

It was in the eager search for knowledge on this and other parts of the morbid anatomy of plague that my former clinical clerk, Dr. C. T. Raikes, lost his life in Singapore, and I cannot allude to the post-mortem appearances of plague without commemorating the keen observation and intelligent devotion to the increase of knowledge of this young Oxonian.

The course of the following obscure case showed an unexpected occurrence of endocarditis and subsequent valvular disease.

A boy, aged 10 years, was admitted to St. Bartholomew's Hospital with a rash on his face, legs, and arms, and ulcerated lips and some sore throat. The spots were pimples with bullæ in the centre and gradually faded away and the mouth healed. The throat gave a pure culture of streptococcus. A cultivation of his blood gave a growth in broth of yellow staphylococcus and some streptococci. The temperature was 100° for two days, and then became normal. On his admission, on March 8th, 1907, his heart sounds were normal and so continued till April 8th. Then a short presystolic murmur was audible just within, and a little below, the left nipple, and a well-marked thrill was felt at the apex. On April 22nd the thrill was still distinct though the murmur was fainter. The rash was most like varicella, but as the nature of the disease was obscure I asked four of my colleagues to express their opinion on it. Dr. Ormerod, Dr. H. H. Tooth, and Dr. J. H. Drysdale were of opinion that the condition was of septic origin and Dr. S. West suggested that the rash belonged to the class of bullous erythema. The murmur and thrill were present when the patient left the hospital, otherwise well, on April 26th.

There were no joint symptoms of any kind and no chorea followed the illness. It was probably an example of endocarditis and consequent valvular disease originating in some sepsis. I suspect that cases of what is called heart failure in influenza may sometimes be due not only to affection of the myocardium but to endocarditis which may sometimes interfere seriously with the action of the valves without causing a murmur. Dr. T. J. Horder has demonstrated the presence in the endocardium of the influenza bacillus. There are two specimens in the St. Bartholomew's museum. In lobar pneumonia it is not common to find clinical evidence of endocarditis, but there is no doubt that the pneumococcus is a cause of endocarditis. Here is a heart showing growths on the tendinous cords and edge of the mitral valve from which pneumococci were cultivated.

It is interesting to observe that in these cases as in those of ulcerative endocarditis valvular disease, often the result of long past endocarditis of rheumatic fever, is often present, as if an already damaged endocardium formed a favourable ground for the growth of streptococci and other organisms.

The view of 30 years ago was that endocarditis was an occasional complication of rheumatic fever. I have tried to show that endocarditis is its central feature. It is clear that endocarditis has many true species, some determined bacteriologically, some resting their specificity on clinical observation alone. Fresh species will certainly be discovered. The nature of the endocarditis of rheumatic fever seems at present to rest on clinical observations alone. It is none the less a good working species. Let us proceed to examine its effects upon the heart.

I may begin the subject by showing you these two specimens. This heart is that of a woman, aged 20 years, whose post-mortem examination I lately attended. It shows some old thickening of the cords and edges of the flaps of the mitral valve and on one flap a small raised red patch of recent endocarditis. Seeing that the uterus contained a fœtus I asked the demonstrator to open its heart and we saw a similar patch of recent endocarditis on the mitral valve of the fœtal heart. I have myself never heard a murmur which I could attribute to an alteration of the fœtal heart sounds and having once asked the late Dr. Matthews Duncan if he had he said that he had never heard any sound from which he could diagnosticate fœtal endocarditis. The heart I have shown you is the only one in which I have ever seen a true fœtal endocarditis in progress. It was clearly part of the maternal infection and it is interesting to observe that while congenital malformations described as due to fœtal endocarditis are generally on the right side of the heart in this case it was the mitral valve that was affected exactly as it was in the mother.

The tricuspid valve is found to show signs of endocarditis in a good many cases post mortem. Thus it was affected in nine out of the 20 cases mentioned above. I do not agree with those who maintain that tricuspid disease can be frequently discovered by auscultation. I incline to doubt any determination of it during life in which pulsation of the veins of the neck has not been clearly made out. And here I wish

to point out the importance of teaching men as a matter of habit never to arrive at the diagnosis of any form of valvular disease from physical signs alone. Too great care cannot be given to the minute study of the physical signs in every heart, and to compare the observations of different days greatly assists to the complete knowledge of the valvular state. If the observer will write down precisely what he hears and on the next occasion do the same without looking at his former note he will learn whether what he hears is constant and if inconstant how it varies. But when the precise physical signs have been made out they must be considered in relation to the movements of the heart, to the character of the pulse, and to the general state of the patient before an opinion is expressed on the nature of the valvular disease. The most striking illustration of the importance of the pulse in relation to the interpretation of a murmur occurs when obstruction at the orifice of the pulmonary artery is the sole lesion. The loud systolic murmur audible is not always distinctly plainer at the second left intercostal space than at the right or on the sternum, and it is to be heard over a considerable area of the chest. It might easily be mistaken for an indication of obstruction at the aortic orifice but that the pulse is absolutely normal. When this is remembered the determination of obstruction at the pulmonary valves becomes one of the most certain among interpretations of cardiac murmurs. A minute search will show faint traces of affection of the right side of the heart due to rheumatic fever in a proportion of cases, but such are very rarely indeed to be found on the pulmonary valves, and still more rarely in sufficient size to cause a murmur. I have never met with an example of regurgitation at the pulmonary orifice. The clinical evidence of affection of the right heart in rheumatic fever is very small.

The left side of the heart and particularly the mitral valve, or the mitral and aortic valves, and rarely the aortic valves alone, are the parts of the endocardium most often deeply affected in rheumatic fever, while the degenerative changes of later life and the effects of syphilis are more often seen in the aortic valves. We speak of mitral obstruction or stenosis and of mitral regurgitation. Since mitral regurgitation is often due to thickening and shortening of the tendinous cords, and since that condition is often associated with thickening of the edge of the valve and the projection of minute growths from it, it is clear that in many cases in which the chief effect is regurgitation some of the physical signs of obstruction may be present, while, on the other hand, extreme narrowing of the orifice by adhesion of the flaps of the valve to one another, though its physical signs are nearly the same as in the other case, has a different effect on the heart and on the circulation as a whole. The commonest physical signs of mitral obstruction are a thrill confined to the region of the apex beat and a presystolic murmur heard in the same region, and these are accompanied by an unequal pulse of diminished volume. The thrill is often systolic in time; sometimes presystolic or including both periods. It indicates some rigidity of the edge of the mitral valve and is never absent in that form of mitral obstruction which is due to the firm adhesion of the two flaps of the valve. A thrill may, however, be present without this adhesion, when there is a thickening of a part only of the edge of the valve or a rigid projecting growth upon its edge. If there is no localised thrill at the apex there is no mitral obstruction. If at the same time a murmur thought to be presystolic has been heard at the apex, further investigation must be made, and it will generally be discovered that it is in fact diastolic and is due to aortic regurgitation, even though it may for a time have been heard at the apex and not at the right base. Changes of position, raising of the arms, and the administration of nitrite of amyl will assist the observer.

Is a definite thrill at the apex ever due to any other cause than mitral obstruction in some form? The answer to this question is that such a thrill sometimes occurs when no other change is present but rigidity of one or more aortic valves. In some such cases the thrill may be felt more plainly still at the second right intercostal space, though definite at the apex. In others, though a thrill is only to be felt at the apex, it is certainly not due to the mitral valve and is due to the aortic valves. A constant thrill felt at the apex only is always present when the flaps of the mitral valve are adherent and thickened and also when a part of the edge of the valve is rigid or a rigid growth projects from it. When a patient has had a systolic murmur loudest at the apex and while the temperature is raised a thrill comes to be felt there which was not there before, it is often the case that adhesion of the mitral flaps has taken place and a permanent mitral stenosis been established. Such permanent stenosis, when it is the immediate issue of an attack of rheumatic fever, embarrasses the heart, but is unaccompanied by any hypertrophy of the left ventricle. Therefore, in a case of mitral stenosis, if there be well-marked hypertrophy of the left ventricle and no chronic interstitial nephritis, other valvular disease, or adherent pericardium, it may be assumed that the primary effect of the endocarditis was mitral regurgitation, that this was the cause of the hypertrophy, and that adhesion to one another of the flaps of the valve was a subsequent event. When mitral stenosis has been proved by repeated examination to be present, and provided there is no chronic interstitial nephritis and it is known that no different valvular lesion existed in the past, and the size of the heart, including the left ventricle, is increased, then, and perhaps then only, may the diagnosis of adherent pericardium be safely made.

Here the importance of examining the heart by means of electric light may be urged. It sometimes gives an exact notion of the nature of the enlargement present. The murmur of mitral stenosis is always the most confined in area of all cardiac murmurs. The murmur of mitral regurgitation is the most widely heard of cardiac murmurs. It is loudest at the apex and generally loud over the whole front of the chest and is audible in the left axilla and at the angle of the left scapula and often over the whole back, but when it is so it is always louder at the angle of the left scapula than at the right supraspinous fossa. Is this widespread area of sound present in every case of mitral regurgitation? To this question a negative answer must be given, for if the heart is acting feebly after a patient has been lying in bed for some weeks the murmur may be very faint and not audible in the axilla or at the angle of the scapula, while a week later, when he has been up and the muscular action of the heart is stronger, while the temperature chart shows that no further endocarditis has taken place, the murmur may easily be heard at the angle of the left scapula.

Here must be considered the question of systolic murmurs which are not associated with any history of endocarditis or with any rise of temperature and which disappear altogether: the murmurs of chlorosis and of anæmic states. These may be heard at the angle of the scapula when they are loud in front. They resemble the systolic murmur of mitral regurgitation, and I believe them to be due to a temporary mitral regurgitation due to the feebleness of parts of the cardiac wall, including the musculi papillares. This hypothesis accounts for their relation to chlorosis and seems to me to rest on a basis of observed fact which is not present to support the hæmic theories. Such murmurs should be regarded as indicating a temporary mitral regurgitation, and the œdema of the feet which occurs in those who have such murmurs as due to the valvular defect.

Is a systolic murmur loudest at the apex always a proof that a patient has mitral regurgitation? This cannot be asserted, for the systolic murmur of aortic obstruction is sometimes, though rarely, louder at the apex than at the base, and I have met with a few cases in which it was audible at the apex only. I cannot prove that this was due to a thickening of the cusp nearest the ascending part of the mitral valve, but if this were so it might explain the conduction to the apex. Such a murmur becomes faint beyond the apex and though loud there is not to be heard at the angle of the left scapula. Here, again, the character of the pulse must be taken with the auscultatory results.

It may be proper here to object to such phrases as "a mitral murmur was heard at the apex"; "an aortic murmur was heard on the sternum." By thus mixing the premiss and the conclusion in the description of a murmur the value of a record is much diminished. What is heard should be stated separately from the interpretation of that observation. The record of what was heard is an observation of scientific value only to be impugned by evidence of a defect of the sense of hearing in the observer. The clear statement of exactly what was heard, of the time of the murmur in the cardiac cycle, of the place where it was loudest, and of the area of the chest over which it was audible, enables future readers to accept or reject the conclusion drawn by the

observer. The mixed statement leaves a conclusion which the future reader has no opportunity of considering, and his acceptance or rejection of it can depend on the authority only of the person making it.

The definite character of the pulse makes the determination of aortic valvular disease, whether obstructive or regurgitant or both, comparatively free from difficulty. The murmurs are the loudest of all valvular murmurs when loud, though they are occasionally barely to be heard. Aortic murmurs may sometimes be heard without touching the chest wall. I have once at St. Bartholomew's Hospital heard a murmur not indeed so loud as that described by Douglas which I mentioned in my last lecture but loud enough to be heard as one stood near the patient without stooping. It was systolic and was due to aortic obstruction. I have since heard murmurs in three cases, all of aortic valvular disease, which were audible without touching the chest.

A woman, aged 50 years, complained of pain in her left shoulder and down her left arm occurring in paroxysms. These had increased for six years in frequency and when they came on she felt stifled and could not move. I myself saw her in one of these paroxysms, and there could be no doubt that it was an attack of angina pectoris. The impulse of her heart was always greatly increased and the apex beat was in the sixth left intercostal space an inch outside the nipple line. A diastolic thrill was to be felt over the sternum at the level of the second intercostal space. A very loud diastolic murmur was audible in the second right intercostal space, down the sternum, at the apex, at the angle of the left scapula, and in the right supra-spinous fossa. The murmur was loudest at the second right intercostal space and was preceded by a very faint systolic murmur. The pulse at the wrist was of the kind often compared to a water hammer. The diastolic murmur was distinctly audible three measured inches from the patient's sternum without stethoscope and without touching the chest or any part of the body. She was admitted to St. Bartholomew's Hospital a month later and the murmur continued to be audible without contact for a week. Then it became less loud and the anginal attacks less frequent, and it was no longer audible without a stethoscope though it always remained audible with one.

A labourer, aged 41 years, who had shortness of breath and palpitation had also attacks of angina pectoris. The impulse of his heart was exaggerated and the apex beat was three-quarters of an inch outside the nipple line in the sixth left intercostal space. A double thrill, systolic and diastolic, was to be felt all over the cardiac area. At the second right intercostal space a loud systolic and equally loud diastolic murmur was to be heard, loudest there but audible down the sternum, at the apex, at the angle of the left scapula, and at the right supraspinous fossa. The pulse at the wrist was very sudden. Both these murmurs were audible without touching the chest at a distance of three measured inches from it. After rest in bed for 14 days the murmurs could no longer be heard without touching though plain with a stethoscope.

A man, aged 22 years, had a much increased cardiac impulse. His apex beat was in the sixth left intercostal space just outside the nipple line. A very loud diastolic murmur was to be heard at the base, audible all down the sternum, and this was easily heard without touching at one inch and a quarter from the chest wall.

The murmur of aortic valvular obstruction and that of regurgitation are sometimes very faint or only audible now and then. If the patient be made to raise his arms above his head a faint murmur often immediately becomes distinct and the same effect may sometimes be produced by the inhalation of nitrite of amyl, but the former method is the better. The murmur of aortic obstruction may often be heard at the right supraspinous fossa, and this is a useful physical sign, for if a systolic murmur be heard in the right supraspinous fossa and nowhere else on the back it is a very certain sign of aortic obstruction, a fact which has not been generally observed and is not mentioned in books on auscultation, not even in the book which we have all read with enjoyment, in which Dr. S. J. Gee has in such measured and well-chosen language set forth one of the best arranged statements of knowledge on auscultation and percussion in English. The diastolic murmur of aortic regurgitation may also sometimes, but much less often, be heard in the right supraspinous fossa.

In a complicated case of valvular disease, when it is wished to arrive at an exact conclusion as to the valves affected, it is often a good plan to listen first at the back and hear what can be heard there without prejudicing the mind by listening first to the louder sounds in front.

The murmur of mitral regurgitation is often very loud at the angle of the left scapula; the murmur of aortic obstruction is sometimes very distinct in the right supraspinous fossa. The murmur of mitral regurgitation, it is true, is often very loud over the whole back, sometimes even including both supraspinous fossæ, but this is not always so, and in a fair proportion of cases it will be possible to distinguish the areas of the two murmurs. The murmur of aortic obstruction will rapidly become fainter as the stethoscope is moved obliquely downwards towards the dorsal vertebræ, and the murmur of mitral regurgitation will be made out to be louder near the angle of the left scapula than near the dorsal vertebræ or beyond them to the right. It may be audible up to the right supraspinous fossa, but when that is reached an immediate increase in the volume of sound is perceptible, for two murmurs each produced in the systole are heard together. A good many systolic murmurs of aortic obstruction are not audible in the right supraspinous fossa while nearly all murmurs of mitral regurgitation are audible at the angle of the scapula. In cases where both murmurs are audible behind I have proved this method of distinction by repeated observations and recommend it to the College.

A character of murmurs produced by aortic disease, when heard in the front of the chest, is their apparent nearness to the end of the stethoscope. This is often of great assistance in distinguishing each murmur when those of mitral regurgitation and of aortic obstruction are both present.

A single observation will never enable one to dogmatise about a complication of murmurs and however erroneous the opinion of some other man may appear to a listener to a heart it is wise not to say this or that cannot be heard till repeated examination has been made. Murmurs, indistinct or inaudible, often become plain as the action of the heart alters.

It is often very difficult to explain the alterations of murmurs. An adherent pericardium, not, I think, by its thickness but owing to its interference with the muscular rhythm of the heart, may produce confusion as to the valves affected. I hope this discussion of a few parts of the subject of valvular murmurs is not too trite for the College. There seems to me to be so much that is difficult in the subject of valvular disease that I have ventured to discuss not the whole of it but a series of parts in which I chance to have had good opportunities of observation.

The first attempt in England to explain the pathology of rheumatism was that of Dr. Clopton Havers of St. Catharine's College, Cambridge, in his "Osteologia Nova," published in 1691. Few have read the book, yet its account of the structure of bone has secured for its author the mention of his name with the Haversian canals by every student of medicine since his time. He advanced the view that rheumatism was due to a sort of jelly "concreted upon the superficies of the muscles." He mentions in support of this hypothesis that rheumatism was due to this mucilage or jelly a case of a curious tumour of the leg, perhaps a hydatid, since it contained "many smaller pieces of white curd mixed with a serum," which he thought showed that mucilaginous glands existed in the muscles and became diseased, and that they were the source of the outpouring which constituted rheumatism. Since the time of Havers many pathological hypotheses have arisen on the causation of rheumatism. None of those relating to rheumatic fever need be recapitulated. Its resemblance to diseases produced by definite organisms is too close for any other hypothesis of origin to be at present probable. It might obviously be included among what Sydenham would have called the epidemic diseases of the year. The pain which it produces we know how to relieve, but when it is considered that it is the origin of most of the valvular disease of the first half of life and of some proportion of the valvular disease of the second half of life, and through them of all the distresses of slow death by dropsy and instant death by affection of the muscular tissue of the heart, as well as of all the diminution of working power which is a necessary result of valvular disease long before it has begun to threaten life, we anxiously look to the bacteriologists for a conclusive demonstration of the nature of the organism which produces it and of its natural history as an important aid to the prevention of rheumatic fever and the diminution of its incidence on the population and of its long train of disastrous consequences.

THE IRISH ASSOCIATION.—The annual banquet of the Irish Association in London, Dr. H. Macnaughton Jones, the President, being in the chair, will take place at King's Hall Rooms, Holborn Restaurant, W.C., on Thursday, May 27th, at 7.30 P.M. Field-Marshal Earl Roberts and Admiral Lord Charles Beresford will be the principal guests of the evening.

A Clinical Lecture
ON
THE REMOVAL OF TUMOURS OF THE LARGE INTESTINE.

Delivered at University College Hospital, London, on Jan. 27th, 1909,

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GENTLEMEN,—It may fairly be said now that every part of the large intestine from the cæcum to the anus is accessible to surgical operations for the removal of tumours of various kinds with or without obstruction. Comparatively recently we have had before us several cases illustrating this branch of surgery and these will form the basis of our clinical lecture to-day.

The tumours with which we have to contend in the large intestine are almost invariably columnar epitheliomata of varying degrees of malignancy. But, as a rule, they are slow growing and have but a moderate tendency to invade the lymphatic glands or generalise in other parts of the system. They may be regarded, then, as offering generally a good prospect of thorough removal under favourable conditions. In addition to these tumours, we also meet with tubercular infiltration of the walls of the bowel forming masses which obstruct its lumen, with actinomycosis and with intussusceptions. Excluding the latter, of which I have already spoken in another clinical lecture, and the actinomycotic masses which are rare and have not come into my own experience in the large bowel, we will consider some of the cases of malignant and tubercular tumours which have come under our notice lately.

The whole question whether we can safely remove such masses is influenced more by the presence or absence of associated obstruction than by anything else. If there is but little or no obstruction to the passage of fæces through the affected part the removal of a segment of the bowel is to a large extent merely a question of skill and accuracy of technique. But if obstruction is present great judgment is necessary as to whether we shall first relieve the overloaded gut by making an artificial anus for a few weeks' preliminary drainage, or at once proceed to remove the tumour and unite the divided ends. As a general rule, the first course is the best. There are several reasons for this. In the first place, the technical difficulty of dealing with a bowel greatly distended with fæces above a constriction are very great. Not only is it very hard to remove the tumour without soiling the peritoneum and abdominal wound, but it is in some cases almost impossible to adapt and suture the distended proximal end to the more or less contracted distal end when the tumour has been excised. This can in some cases be avoided by lateral anastomosis with closure of the ends, but unless the mesocolon is long or has been mobilised by division of its mesentery it may be very hard to bring the parts side to side. But even though this may be accomplished and the side-to-side junction of the colon be made, there is another risk from immediate anastomosis of a loaded gut without a preliminary drainage which must never be forgotten. This is the giving way of the stitches, first under the strain put upon them by the loaded gut above, and, secondly, some days after the junction has been effected by the cutting out of the stitches in the proximal part. You may ask why this cutting out may occur so late as perhaps the fifth day when union of the divided viscera should be as sound as it is at such a time after a gastro-enterostomy, for instance; but it is easily understood by those who have seen many of these cases. The part of a bowel proximal to any bad obstruction becomes in course of time paralysed and sodden with the toxins of fermenting fæces. Its tissues under these conditions will not hold firmly and there is an absence of that healthy plastic peritonitis around them upon which the ultimate soldering up of the two ends of the bowel depends. The result is a giving way of the stitches at one or more points always in the proximal end and either a perforation leading to death or a fæcal fistula on the surface of the abdomen. The difficulty of determining by the eye or by touch whether bowel above an obstruction is sound enough for suture is so great that it is a better and safer rule to make a provisional drain opening in it and allow the gut to recover in the course of a couple of weeks or so before attempting a junction. This may or may not be combined with the removal of the tumour according to circumstances. This does not apply to obstruction of the small bowel where enough can be drawn out to reach a part above where the coats are sound. Here we have only to draw the coil downwards for several feet, clamp it, and remove the sodden loaded part with its contents and make our junction between healthy tissue below the point of obstruction and healthy tissue high up, as I did in these cases from which these pieces of black semi-gangrenous gut several feet long were successfully removed (specimens shown). Such an extensive removal of a loaded colon cannot, of course, be done. Moreover, it is a well-known fact that where there is a stubborn obstruction low down in the colon which has persisted for a long time a state of ulceration frequently exists in or about the cæcum, and this would prevent any sound junction, even if it were possible to unite the cæcum with the lower part of the large intestine after removal of the intervening portion. It is better, then, I repeat, to drain an obstructed colon for a long enough time for it to recover its muscular tone and expel all fermenting fæces and their toxins before attempting any junction after excision. This will usually take from two to three weeks. But in those cases of tumour of the large intestine where obstruction does *not* exist to any large extent, or where the fæces are solid, the bowel is sound enough for all the purposes of repair and successful excision of parts of it depends on manipulative skill and accurate technique. A careful study of the history and course of every case and a close examination of the abdomen should precede any operative undertaking especially to determine whether the bowel is likely from the history to be loaded with liquid fæces or can be shown by palpation to be so. The practice of administering drastic purgatives in cases of obstruction low down is responsible for many of the unfavourable conditions due to loading of the bowel with liquid fæces which we meet with in these cases. Enemata, on the other hand, are always desirable and should be repeated over and over again if time permits. But not just before the operation. It is better to have the distal part of the gut in a state of rest at the time of operation, empty or not.

Perhaps the best way of bringing under your notice the technique of removal of the cæcum for tumour without obstruction is to describe what was done for a patient who has recently left the hospital well from whom the specimen before you was removed.

The patient, aged 40 years, was admitted to University College Hospital for a tumour in the right iliac fossa of about the size of the two fists and a fæcal fistula leading into it. She had been operated on in the provinces two years before for fæcal abscess supposed then to be due to a tubercular appendix. Since then the operation wound over the cæcum had never quite closed and fæces continued to be discharged from a fistula leading deep into the swelling. She was on admission much emaciated and enæmic but apart from what has been mentioned there was nothing to be found in the abdomen. The diagnosis we made was tubercle of the cæcum. As there was no prospect of closing the fistula by any other means it was determined to excise the tuberculous cæcum. This involved a very extensive operation under unfavourable conditions as to asepsis in view of the fæcal fistula but favourable inasmuch as there was no obstruction. After every possible process of cleansing had been carried out for several days two elliptical incisions meeting at both ends were made, including the old scar with the fistula in its middle. These incisions were deepened until a clamp could be applied to close the fistula so as to prevent any escape of fæces during the rest of the operation. When by carrying these incisions deeper the abdomen was opened it was found that the whole cæcum and part of the ascending colon were converted into a large solid mass of tubercular scar tissue imbedded in adhesions in the omentum and parietal peritoneum. It was also seen that the last part of the ileum for about two feet and the whole of the ascending colon were studded closely with large countless tubercles which

also appeared in smaller amount on other coils which were seen in the wound [specimen shown]. It was plain then that the whole cæcum, ascending colon, and a couple of feet of ileum would have to be excised to give any good prospect of a riddance of the disease. This was accomplished by double clamping of the ileum in *relatively* sound tissue where only a few tubercles could be seen and dividing it between the clamps. The proximal end of the ileum was then implanted into the transverse colon. The last two feet of the small gut, the cæcum, and the ascending colon were then separated from their attachments, their vessels being carefully tied off, and the colon was double clamped on the proximal side of the ileo-colic anastomosis, divided between the clamps, and its distal end sutured by two rows of stitches, the last being sero-muscular, the first through all coats. All this was done with the greatest care as to asepsis, the large pelvic dissection being packed with gauze as it was proceeded with. When the gauze was removed at the end the cavity was dry. But as we had been working on a part with a fæcal fistula in it and seeing that it might have been infected during the operation, I felt that the extensive wound ought to be drained. This was done with a large apron of gauze stuffed with a long strip of iodoform gauze. The ends of the wound were sewn together. The operation, which lasted nearly two hours, was done under spinal analgesia, which gave ideal conditions for both the operator and the patient, who had begged for it in preference to general anæsthesia, of which she had most unpleasant experiences. Just at the end the patient began to feel a little but made light of it. There was no shock and the large cavity contracted slowly until only a track was left. This seemed to be kept from healing either by a deep ligature or a tubercular nodule. When the patient left hospital for the country she was putting on weight and had only a very trifling sinus yielding a drachm or two of thin discharge daily.

The specimen now before you shows the most extensive tubercular disease of the parts involved, and where the cæcum is laid open it is seen to be shrunken and stenosed, so that the passage through it would only have admitted a No. 12 catheter into the colon. Six damson stones were found in it, one of which blocked the contracted part. The bowels after the operation were soon regular and the motions normal until the patient went home.

This excision is typical of what can be done on the large intestine on the right side of the abdomen, whether for non-malignant or malignant disease. In either case I have come to regard it as perhaps the least difficult part of the colon to attack and most likely to give good immediate and remote results. My first excision for cancer of the cæcum done in 1899 was on the same lines and did well. For six years the patient was in the best of health but then presented himself with secondary deposits and died not long after. But six years of the best of health was gained. In this case the ileo-colostomy had to be done for acute obstruction, the excision following some five weeks later, and this obstruction was the chief risk in the case as already explained owing to the possibly unsound condition of the bowel above the tumour due to the putrid fæces retained there. As the event showed, it was sound enough to hold the sutures. But as a general rule it is better to assume that it is not safe to make an immediate junction, and therefore an artificial anus is made higher up in less damaged bowel unless a large stretch of the intestine can be at once excised with its contained putrid contents. The operation of removal of the cæcum is, of course, a severe one, and in the aged or very asthenic younger adults it will often be better to content oneself in the first place with simply anastomosing the ileum to the transverse colon. Later, if the general condition be much improved, the excision may be undertaken if the patient be in favour of it after the condition of things be fully explained. Some patients will face any risk in preference to having the prospect of inevitable slow death from cancer. It is here that much judgment and experience are needed; no hard-and-fast rule can be laid down. The immediate results, it has been said, of excision of the cæcum are good, and I believe it is correct to say that all the cases which I have contributed to the hospital records have recovered.

In the case of tumour of the transverse colon or splenic flexure a great deal depends upon whether there is much obstruction or not. If this is obviously present, as is often found, or in cases in which we are in doubt upon the point, it is a good rule to make an incision below the umbilicus in the middle line. It will then be seen whether the small intestine is much loaded and distended. If this is the case a coil from the lowest part of the ileum which can be reached should be drawn out of the incision and held over a basin, the wound being packed with gauze. The bowel is then opened with a knife or scissors transversely and as much as possible of its contents are allowed to drain away. The more that escapes the better, and it will now be possible in doubtful cases to pass the hand into the abdomen and ascertain the exact seat, size, and connexions of the tumour. Nothing in the shape of excision should now be done, but as soon as the bowel has been well emptied the opening in it should be fixed in the wound as securely as possible and the latter closed all round it with or without a tube in the orifice. If much of the contents have flowed away with great relief it is sometimes better to close the opening by temporary stitches securing the sutured spot in the abdominal wound. Then after a couple of days, during which adhesions have formed round the sutured knuckle, the stitches in the bowel can be cut and further drainage of the intestine be thus provided for with less risk of infection of the abdomen than if the fæcal fistula had been formed at once. Subsequently, when the abdomen has unloaded itself and the effects of toxic absorption have passed off, usually in four or five weeks, the tumour of the transverse colon or splenic flexure may be excised in the first case by a median incision above the umbilicus and in the second by an oblique incision from about the end of the tenth rib downwards and forwards. In one of the most interesting, because worst, cases of obstruction I have ever had this was done on Jan. 27th, 1904, with the best results, and the man is now before you quite well, exactly five years later, to-day, Jan. 27th, 1909.

The patient, a man over 57 years, was enormously distended and very ill and we could only infer from the symptoms that the tumour was in the splenic flexure. An opening was made in the small intestine two feet from the ileo-cæcal valve which evacuated an enormous quantity of liquid fæces and gas. This enabled the hand to be passed in and the colic carcinoma was found at the splenic flexure. Some weeks later the ileum proximal to the fistula was laterally anastomosed to the sigmoid flexure below the growth through an oblique incision in the loin. A few weeks after this the growth was excised by opening up the last incision and the colon above and below it was closed. Later the ileum above the fistula and below the anastomosis was closed to direct all the fæces into the sigmoid and the distal part was left in the wound as a safety valve for the colon which you remember was closed above where the growth was taken away. I heard of the patient in good health a few weeks ago and have asked him to come up for examination to-day. You see him now strong and well, having put on several stones weight in the five years which elapsed since the operation. To have attempted immediate excision and end-to-end junction in this case in unsound bowel distended by putrid fæces would have been to court disaster, and the same might be said of a short circuit done at once between the ileum and colon. It was thus necessary to operate four times on him before the intestinal circuit was rearranged. But it is otherwise in those cases of tumour of the transverse colon or splenic flexure in which there is no distension and but little obstruction or only intermittent blocking. Here the resection and end-to-end or lateral junction can be done with a good hope of success. The first case in which I did this on the transverse colon some years ago was in a woman, aged about 50 years, who had, it may be mentioned, 6 per cent. of sugar in her urine. The growth was removed from the transverse colon and she made a good recovery. She came into one of the medical wards of the hospital for hemiplegia, apparently of cerebral origin, several years later, some hemiplegia remaining, I believe, when she left. Here there was no previous drainage of the intestine, there being no distension, and the fæces above the seat of operation were solid formed scybala and the intestinal walls were sound. But the thin walls of the colon were very difficult to suture accurately end to end, and I was not surprised to have to deal with a small fæcal fistula in the wound for a week or two, which, however, closed of itself without special treatment. It may be asked,

Why not make a fæcal fistula above the growth *in the colon itself* in cases where it is very much loaded with liquid fæces instead of in the ileum as in the case recorded above and so empty all the colon direct? This may be done, but it is far more difficult to draw the distended colon out of the wound and make a safe union between its thin coats and the abdominal wall than it is to secure the thick-walled small intestine. Moreover, at the subsequent excision of the growth the presence of a fistula in the colon not far from the field of operation not only makes it more difficult to keep the procedure aseptic, but the attachment of the colon at the seat of the fistula makes the manipulation of the bowel far from easy. Again, it appears probable in these cases of obstruction of the colon in its transverse and splenic portions that liquid fæces can be emptied by anti-peristalsis through the ileo-cæcal valve and a fistula in the lowest part of the ileum.

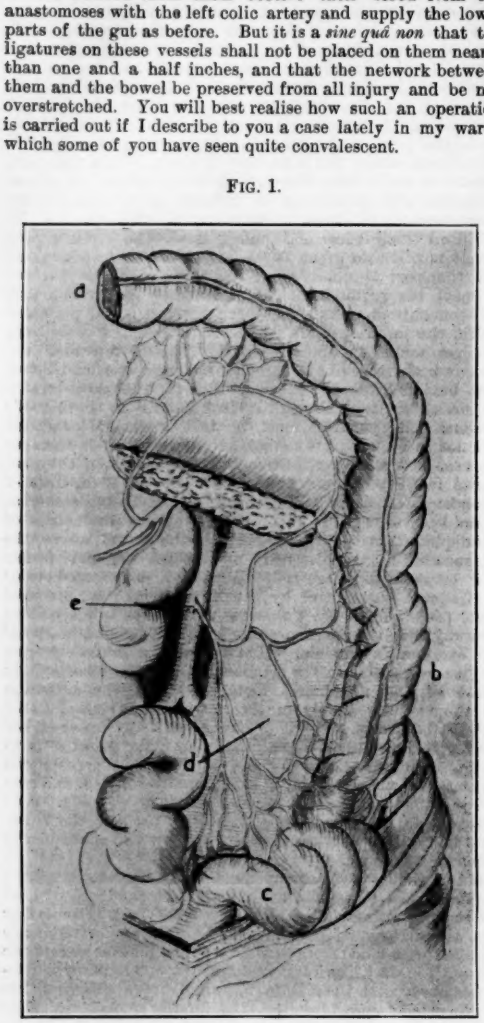
But in cases of sigmoid flexure tumour with distension with liquid fæces an artificial anus may be made in the transverse colon or cæcum with advantage, and when the gut has been unloaded for a few weeks the growth may be removed through a fresh oblique incision in the left inguinal region or just above it, and an end-to-end junction made. At a subsequent operation the artificial anus can be closed. But in some cases a better means may be adopted. This consists in operating at once over the sigmoid, separating the mesentery of the part in which the growth is seated, and drawing it out of the abdomen. Then when the wound has been securely stitched round both the proximal and distal portions the growth can be cut away and the upper part of the colon be drained with a Paul's tube for two or three weeks until the bowel above is healthy and sound. Then a second operation is done to unite the proximal and distal ends by opening up the old wound, including it between two curved incisions to secure fresh aseptic surfaces. This is a difficult operation from the point of view of asepsis, but it can be done successfully with due care. This was the course which I followed with perfect success just a year ago in the case of a patient in one of the southern counties who was suffering from carcinoma of the sigmoid with enormous distension of the colon. I heard from this patient himself, now perfectly well, a few weeks ago on the anniversary of the operation. This will be, as a rule, the best course in an average case of tumour of the sigmoid with much distension of the colon above, but in some cases where we feel sure from the history, from the recent passage of fæces and flatus, and from the appearance of the colon when exposed that the bowel above is not over-distended and is sound, we may at once proceed to resect the growth and unite the ends. This, of course, avoids the artificial anus with all its discomfort and the risk of sepsis immediately and at a subsequent operation, but there is always the possibility of being deceived as to the soundness of the bowel and we may have one or two stitches giving way and a fæcal fistula resulting. This, as a rule, will close soon, but there is, of course, a risk until it does so. I have treated several such cases in this way with good results, but in some a fæcal fistula has for a time given rise to anxiety. This is notably the case in a private case operated on some weeks ago still under my care. I thought that the history and the appearance of the bowel above the sigmoid growth pointed to sound and only slightly distended bowel and removed the growth through the left inguinal incision, making an end-to-end junction. But from the moment the gut was replaced in the abdomen and for days after there was a copious flow from the anus of liquid and very foul fæces. About the fifth day there was a little escape of gas when the drain-gauze was removed, and this was followed a day later by a little fæces and then more each day from the wound. But now the bowels are acting freely by the anus and the fistula is yielding very little. This case was complicated by a cystic ovarian tumour of the size of a large cocoanut, which nearly filled the pelvis, and by very bad piles, both of which made the emptying of the bowel below the juncture very difficult, and this may have thrown an extra strain on the sutures at the junction to which they yielded. But as the piles are better now and the rectum is emptying itself freely, the sinus in the original wound will probably soon close. The lady is otherwise quite well.

And now we turn to those tumours of the large bowel which are seated below the promontory of the sacrum too low for excision and union of the severed ends from an abdominal wound and too high to be reached with ease from below. These cases have always been a crux to surgeons in spite of the introduction of Kraske's operation from behind. Now, of course, where they are seated low enough to be reached by the dorsal or perineal methods and are not too widespread, they are dealt with by these methods. And it is surprising how much of the bowel may be excised from below. But there are many cases in which the growth lies in that part of the colon just below the promontory of the sacrum, where the mesentery is short, which are most difficult to reach from below, and the condition of whose mesenteric attachment as to infected glands cannot be ascertained from here. Moreover, if this portion be mobilised from below and pulled down the strain on its vessels is often so great as to arrest the current in them and the part is deprived of its blood-supply and dies. To meet the requirements of such cases a very bold but well-thought-out method has been proposed and practised within the last few years which, if severe and prolonged, has yet much to recommend it. This is to attack the tumour both from above through the abdomen and below from behind below the sacrum. But for this procedure to be carried out with success several conditions have to be present. The patients must be in fair general condition and not in an exhausted state, as unfortunately is so often the case before the condition is recognised and they are placed in the surgeon's hands, and they must be free of secondary deposits. Again, they must not be too stout, as it has been found that in obese patients the difficulties of technique are very great. Further, the bowel above the tumour must not be distended and loaded with fluid fæces. If it be so in any case relief must be first procured either by frequent enemata or by the formation of an artificial anus, preferably in the transverse colon, so as to place it as far away from the future opening in the abdominal wall for the excision as possible. Finally, such a procedure can only be successful in the hands of a surgeon who is fully aware of the anatomical facts on which the provision for the vascular supply of the long tract of bowel to be mobilised depends. For it is clear that if the lower end of the sigmoid flexure—i.e., the part above the growth—is to be brought down near or to the anus it will be necessary to separate the meso-sigmoid, as it is sometimes called, and also at least the lower part of the descending meso-colon. And if this be so, the vessels supplying these parts of the bowel must be carefully preserved, otherwise they will subsequently become gangrenous.

Let us glance at the arrangement of the vascular supply of the implicated bowel and see if it may be mobilised without the risk of cutting off the blood-supply. You will remember that the descending colon, sigmoid flexure, and rectum are supplied with blood from branches of the inferior mesenteric artery. (Fig. 1e.) The left colic branch from this artery anastomoses above with the middle colic and below with branches of the arteria sigmoidea from the inferior mesenteric. The sigmoid artery, on the other hand, anastomoses below with the branches of the superior hæmorrhoidal artery, which may be described as the lowest terminal branch of the inferior mesenteric artery supplying the rectum proper and communicating with branches of the middle hæmorrhoidal arteries coming from the vesical or the internal iliac direct. These on their part meet the system of the inferior hæmorrhoidal plexus derived from the pudic artery. Now it is quite plain that if the bowel from the promontory of the sacrum to near the anus is going to be removed, the sigmoid flexure must take its place and its vascular supply must be uninjured when it is drawn down to the anus, and this without undue strain being put upon it. But it is equally obvious that the sigmoid and superior hæmorrhoidal arteries must be cut and tied if the sigmoid is to be mobilised. How, then, is the circulation in the sigmoid to be carried on if the sigmoid artery is tied off when its mesentery is separated from the pelvic wall? This is easy to understand if you will look at the arrangement of the vessels of the left colon. I show you this as given in Quain's "Anatomy." You will see that each of the arteries named just now as it approaches the bowel breaks up into numerous large branches forming a wide-meshed network all along the mesenteric attachment of the bowel from the splenic flexure to the rectum. This network is at least one and a half inches deep measured from the bowel. If, therefore, the sigmoid and superior hæmorrhoidal arteries be carefully tied about two inches from the bowel the large

vessels derived from them receive their blood from the anastomoses with the left colic artery and supply the lower parts of the gut as before. But it is a *sine quâ non* that the ligatures on these vessels shall not be placed on them nearer than one and a half inches, and that the network between them and the bowel be preserved from all injury and be not overstretched. You will best realise how such an operation is carried out if I describe to you a case lately in my wards which some of you have seen quite convalescent.

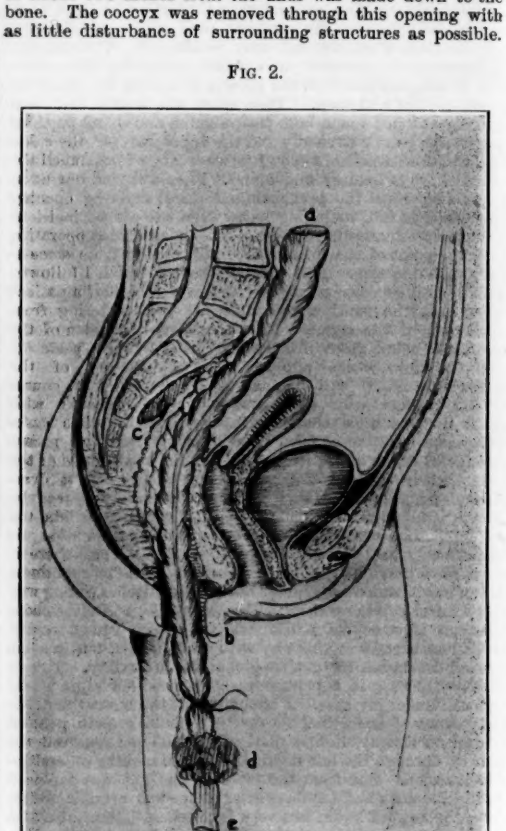
FIG. 1.



a, Transverse colon. b, Descending colon. c, Sigmoid flexure. d, Line of division of sigmoid and superior hæmorrhoidal arteries. e, Inferior mesenteric artery. (After "Quain's Anatomy.")

The patient was a slightly-built thin woman, aged 40 years, with symptoms of intermittent obstruction with the passage of blood and mucus. There was no distension and no tumour could at first be made out either by rectal or abdominal examination. But by the use of the proctoscope we eventually saw clearly a carcinomatous ulcer high up. No glands or secondary deposits could be made out and the uterus and vagina appeared normal. You will see from this that the case fulfilled several of the conditions mentioned above, and was so far favourable for operation. Having cleared out the bowel by laxatives and enemata and cleansed the abdominal wall and sacral region rigorously, the operation was begun with the patient lying on her back. An oblique incision was carried from about one inch above and internal to the spine of the ilium to nearly the middle line an inch above the symphysis pubis. Through this skin incision the fibres of the three muscles were separated to nearly the same extent. Where they ran into the sheath of the rectus the latter was opened enough to permit of this muscle being drawn inwards with hooks. The peritoneum was now slit up in the line of the main wound and the sigmoid presented. It was then seen that it ran into a mass of carcinoma occupying the pelvic colon at the level of the promontory too low down for removal and anastomosis of the divided ends from our abdominal opening. At the same time it seemed otherwise a favourable case for excision, for there were no glands or secondary deposits or adhesions to be made out. It was therefore determined to remove it by the combined abdomino-dorsal method. To this end the sigmoid was first drawn out and the abdomen about its root was well packed with a long roller of gauze. Then the meso-sigmoid was detached from the pelvic wall at least one and a half inches from the border, having first been transfixed with double threads between which its vessels were divided. This separation of the mesentery was carried upwards until the lower part of the descending colon was likewise free and downwards until the upper part of the rectum was mobilised from the hollow of the sacrum. The gauze was then drawn out, the wound revised, and the abdominal opening provisionally closed by a few stitches and carefully dressed *pro tem.* The patient was then turned over to her left side and an incision curving from the left side of the sacrum to the middle line and down to about two inches from the anus was made down to the bone. The coccyx was removed through this opening with as little disturbance of surrounding structures as possible.

FIG. 2.



a, Last part of descending colon. b, Last part of sigmoid sutured to everted anal portion of rectum. c, Peritoneum sutured to sigmoid after the latter is drawn down. d, Growth drawn out through anal portion. e, Rectum below the growth

The rectum was now pulled downwards until the openings in the peritoneum on either side of it made from above could be seen. These openings were then continued downwards on either side of it as far as the peritoneum extended. The whole of the large bowel from the last part of the descending colon to above the anal portion of the rectum was by this time mobilised and the sigmoid loop was converted into a straight tube of which the part well above the growth would easily reach the anus. The anus

was now stretched by an assistant who took no further part in the operation. Then a bulbed rod was passed through the anus and up to the growth and from the dorsal wound a stout cord was tied round the whole bowel below the bulb. The rod being now withdrawn brought the growth (with some help from the hand above) within and through the anal portion like an intussusception and turned the anal portion inside out. (Fig. 2.) The anal portion was now divided all round about two and a half inches from the skin margin exposing the lower part of the pelvic colon about four and a half inches above the growth. The cut edges of the anal portion were now united to this by stitches passing through all its coats and the sero-muscular coats of the colon within. Then a stout thread was tied round the whole protruding colon about two inches below the line of suture and the bowel was cut across below this and well above the growth. All this was done without opening the bowel until the edge of the everted anal portion was stitched to the inner tube, and this was done cleanly so that any possible soiling of the abdominal or sacral wounds was avoided. The thread round the gut below the line of suture prevented the escape of fæces or mucus for a couple of days during which union would be pretty firm. After this we revised the abdominal wound and pelvis and found both satisfactory and stitched up our abdominal incision in layers. Then the dorsal wound was in part closed and drained with gauze. The part of the colon below the line of suture was left to slough off, which it did in a week, and the bowels began to act at this time. The abdominal wound healed without a flaw under the first dressing and the dorsal contracted up and closed without incident. The patient showed no trace of abdominal trouble from beginning to end, and left the hospital with full control over her motions. The patient presented herself for examination in the middle of April in excellent condition and with perfect control over fæces and flatus. This was due to the fact that beyond being turned inside out *pro tem.* no injury had been done to the anal portion of the rectum which contains the sphincter apparatus.

This intussuscepting method when it can be accomplished with moderate-sized tumours renders it possible to do all the stitching part of the operation outside the anus, whether it unites the colon to the everted anal portion or actually to the margin of the anus after removal of the mucous membrane.

This so-called "combined" procedure is beyond doubt a severe one and not suited for decrepit or obese people. In this case there was little shock and all the objects we had in view were carried out.

Now we come to the case of growths of the rectum within reach of the finger in the anus. These can undoubtedly be mobilised by the dorsal wound alone, and in many cases at all events the upper part of the bowel can be brought down far enough for junction with the intact anal portion, if not with the anus itself. But the dorsal method alone has its weak points. The chief of these is that possible infection of glands high up cannot be ascertained, nor can the condition of the peritoneum. And even if it is recognised that these structures are more or less the seat of secondary deposits these cannot be removed so cleanly as they should be. Again, the arrest of bleeding from the dorsal wound is in some cases as difficult as it is indispensable; and further, when after mobilisation of the gut from below the parts are drawn down, there is always the possibility of too much strain being put upon the vessels of the intestine and of sloughing being caused thereby. For the loops of vessels formed by the superior hæmorrhoidal artery are by no means as perfect as those derived from the sigmoidea and the left colic. The inadequate length of the upper part of the bowel above the growth may sometimes only be realised when the operation is half finished and there may then be no alternative but to make a sacral anus with all its disagreeable results as to incontinence of fæces. These defects in the dorsal method have certainly justified a search for some procedure which shall eliminate them even at greater risk to the patient. So serious a condition as cancer of the rectum justifies the running of great risks if we have a prospect of ridding the patient of an otherwise inevitably fatal disease. And in theory, at all events, the combined abdomino-dorsal method does offer such a prospect, and not only that but of doing so without forfeiting the sphincter action of the anal portion of the rectum. Nevertheless, there are still strong opponents of the combined method, and that among surgeons who have a very large experience running into hundreds of operations in this class of cases. And for a long time to come it seems likely that the sacral procedure will hold the field for ordinary cases. But still, it is a significant fact that Kraske, who originated the dorsal method and who has done more to popularise it than any living surgeon, has lately come forward with a plea for the abdomino-dorsal method as a measure which gets over many of the defects of his own original operation. Of this latter I should like to speak more in detail and to give you some of my own experiences, but time fails. I should like, however, to add one word as to the present risks of the two methods. The mortality of Kraske's operation in the hands of some skilled surgeons who have performed it hundreds of times has fallen from 32 per cent. to below 10 per cent. The abdomino-dorsal method has not been practised long, and we have very few statistics to guide us so far. But in Kraske's own series of ten cases reported in April, 1906, he had 40 per cent. of deaths. It may be taken as almost certain that a long time will elapse before this mortality is brought down to 10 per cent. However, if the results, immediate and remote, and as regards control of fæces, are better by the newer method the risks of a higher mortality will be faced by many sufferers cheerfully.

A Clinical Lecture

ON

WHEN TO OPERATE FOR ENLARGED PROSTATE:

WITH A REVIEW OF 600 CASES OF TOTAL ENUCLEATION OF THAT ORGAN.

Delivered at the Medical Graduates' College and Polyclinic on March 17th, 1909,

BY P. J. FREYER, M.D., M.CH. R.U.I.,

SURGEON TO ST. PETER'S HOSPITAL; CONSULTING SURGEON TO QUEEN ALEXANDRA'S MILITARY HOSPITAL.

GENTLEMEN,—Nearly eight years have now elapsed since I first brought my operation of total enucleation of the prostate for radical cure of enlargement of that organ to the notice of the profession in a lecture delivered in this college on June 26th, 1901, and published in the *British Medical Journal* of July 20th of the same year. I then gave full details of four instances in which I had performed this operation, in all successfully.

I have now completed 600 cases of this operation, the statistics of which I will presently place before you. But before doing so I propose once more giving you an account of the anatomical and pathological considerations on which the operation is based, and describing the various steps of the operation. Further, I shall endeavour to answer a question that is frequently put to me—one of great importance to you, as general medical practitioners—namely, At what period in the history of this disease is it advisable to have recourse to surgical operative interference?

Let me, in the first instance, however, introduce to you the first two patients on whom I performed this operation of total enucleation of the enlarged prostate. They have been good enough to come here to-day at my request in order that you may have the opportunity of questioning them and ascertaining for yourselves the remote results of this operation. They are now aged respectively 79 and 75 years; eight years and four months having elapsed in the first case and eight years in the second since the operation was performed. They will recount to you the severe sufferings they went through for some years before operation, having been entirely dependent on the catheter, and their complete freedom from urinary symptoms and excellent health enjoyed by them since recovery therefrom. No catheter or instrument of any kind has been employed since then, and they will tell you that they can retain and pass urine which is perfectly normal not only as well as, but even better than, at any previous period in their histories, for the stream flows in larger volume and with greater force than before. They will further tell you that they regained sexual power after

having lost it temporarily in consequence of the pain and debility attendant on the malady. The term "success" after surgical operations is capable of very elastic interpretation. In these cases you will observe that success signifies an absolute and complete cure.

Another of the four cases detailed in my first lecture wrote on Jan. 5th, 1908: "From the day I left the home up to the present time I have never suffered the slightest pain or inconvenience in any way, and I feel now ten years younger than when I first, so fortunately for me, met you." This gentleman paid me a friendly visit about a week ago, when I found him—nearly eight years after operation—in perfect health, untroubled by any urinary symptom. The fourth case, a hospital one, I lost touch with some months after the operation, and have since been unable to trace him owing to change of his address. During those months he suffered from no urinary symptom.

[Mr. Freyer then described the anatomical and pathological considerations on which the operation is based, as well as the various steps of the operation. For these the reader is referred to THE LANCET of July 23rd, 1904.[1] They are given more fully still in the third edition of Mr. Freyer's work "Enlargement of the Prostate."[2]]

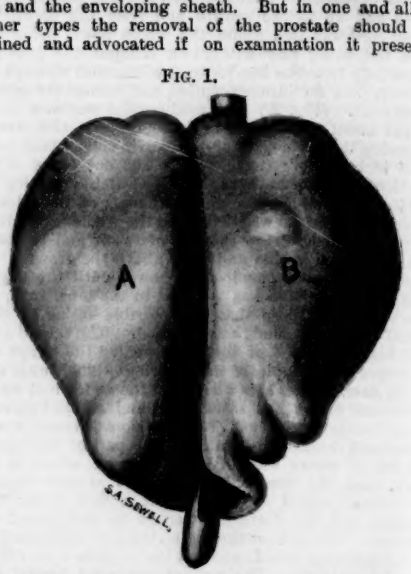
Passing on now to the question as to what period in the history of prostatic enlargement it is advisable to have recourse to surgical interference in the form of operation, apart from the patient's age and general state of health, the two following considerations have to be taken into account: (1) The specific symptoms dependent on the prostatic enlargement from which at the time the patient is suffering; and (2) the nature, size, and general conformation of the prostatic growth.

I. Patients suffering from prostatic symptoms will be found when they apply for surgical relief to come under one or other of the following types: 1. Patients suffering the usual symptoms of prostatic enlargement in the earlier stages of the malady, in whom on examination not more than an ounce or two of residual urine is found on introducing a catheter. 2. Those who have probably suffered from prostatic symptoms for several years, in whom we detect a quantity of residual urine varying from 3 to 10 ounces, or even more, but who have never employed a catheter for the purpose of emptying the bladder. 3. Patients suffering from over-distension of the bladder, with extreme frequency of micturition, possibly continuous dribbling of urine, particularly at night time when asleep, but who have never been relieved by a catheter. These patients invariably consult the surgeon because, as they say, they "cannot hold their water," little imagining that the bladder is over-distended and that it is the "overflow" which dribbles away. They are intensely astonished when you draw off several pints of urine by the catheter, with a corresponding decrease in the size of the abdomen. 4. Those cases in which the conditions described in paragraph 3 have culminated recently in complete retention of urine, and in whom great difficulty is experienced in introducing a catheter. 5. Patients who from time to time have had retention of urine, which was relieved by the catheter, but who have not employed this instrument as a routine practice to empty the bladder daily. 6. Patients who for weeks, months, or even years have employed the catheter daily, once, twice, or oftener, for emptying the bladder, but who still retain the power of passing a certain quantity of urine naturally. 7. Those entirely dependent on the catheter for emptying the bladder. In the advanced stages of the disease patients of this type rarely escape from recurrent attacks of one or more of the following complications—viz., cystitis, pyelitis, hæmorrhage, vesical calculus, recurrent attacks of fever with rigors, and difficulty in introducing the catheter.

In the first of these types it will, as a rule, be unnecessary and inadvisable to attempt the removal of the prostate; because, in the first place, the symptoms will probably not be sufficiently irksome to warrant such an operation; and, secondly, the enlargement of the organ will not have sufficiently advanced to render it prominent in the bladder, or to define adequately the lines of cleavage between the true capsule and the enveloping sheath. But in one and all of the other types the removal of the prostate should be entertained and advocated if on examination it presents those characteristics—to be presently described—that render its enucleation entire in its capsule practicable, there being no condition of the general health of the patient to negative an operation of this magnitude.

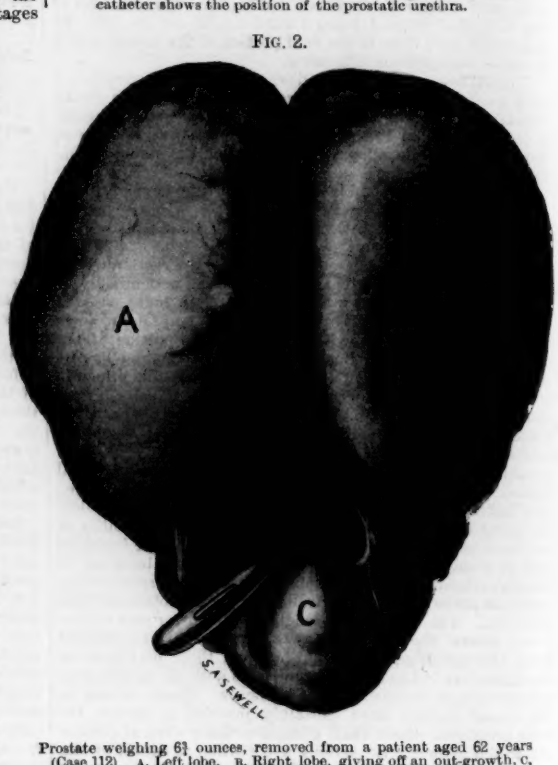
I cannot too strongly urge early removal of the prostate

FIG. 1.



Prostate weighing 1¼ ounces, removed from a patient aged 67 years (Case 133). A, Left lobe. B, Right lobe. The catheter shows the position of the prostatic urethra.

FIG. 2.



Prostate weighing 6¾ ounces, removed from a patient aged 62 years (Case 112). A, Left lobe. B, Right lobe, giving off an out-growth, C, in the bladder. The catheter shows the tortuous course of the urethra.

[1] 110 Cases of Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ.

[2] Baillière, Tindall and Cox, London.

when there is decided enlargement of this organ, giving rise to urgent symptoms necessitating the employment of the catheter, before grave complications supervene. When undertaken whilst the patient's general health is sound and the kidneys are unaffected there is practically no danger attaching to the operation in experienced hands. But when once complications set in, and particularly when the kidneys become diseased, whether through backward pressure of the urine on these organs or from extension upwards of inflammation from the bladder, the operation must necessarily be attended by considerable risk.

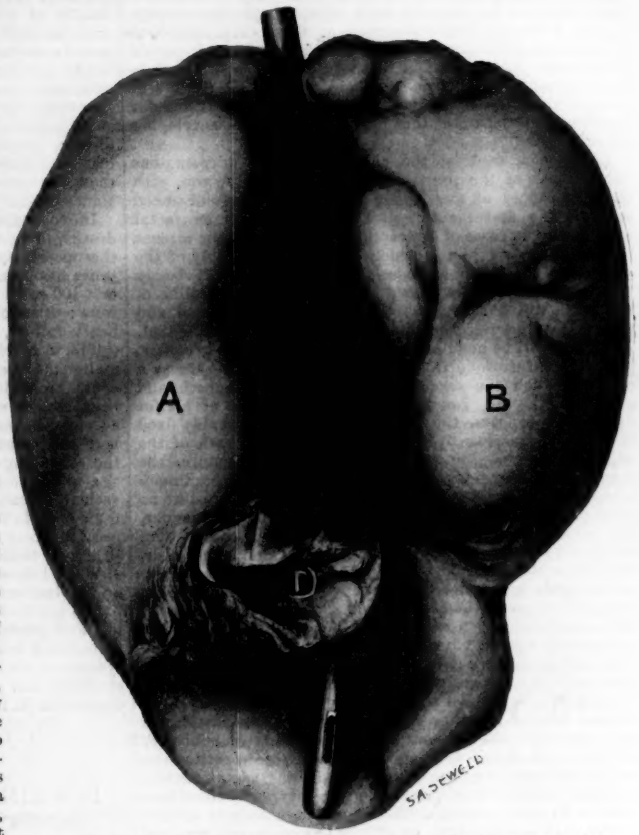
Another grave danger attached to postponement of operation is this, that recent experience has demonstrated beyond doubt that the adenomatously enlarged prostate, which is, of course, a benign growth, has a tendency to assume a cancerous type under the irritating influence of the catheter and complications incidental to catheter life. This is a subject to which considerable attention has been directed recently in France, and so experienced and practical a surgeon as Pauchet of Amiens puts the proportion of adenomatous prostates that thus degenerate at as high a figure as 10 per cent.

II. In order to ascertain whether the prostate is capable of being enucleated entire in its capsule, the patient, if capable of passing any urine naturally, is directed to empty his bladder as far as possible, and is then placed on a couch in the recumbent position. The bladder is then emptied of its residual urine by means of a catheter. The forefinger of one hand, previously lubricated, is slowly introduced into the rectum, and when the sphincter ani is thoroughly relaxed a survey of the rectal aspect of the prostate is made. If the organ is found to be decidedly enlarged, presenting a well-marked tumour in the rectum, more or less rounded in shape, bilobed laterally, with a well-marked furrow in the median line, smooth on the surface, soft or somewhat dense to the touch, and (most important of all) moveable, you know that you have to deal with the ordinary adenomatous enlargement of the gland of advanced life. If, in addition, from its prominence in the rectum you estimate the tumour to be at least of the size of a Tangerine orange, the case may be regarded as in all probability one in which the prostate is capable of being enucleated entire.

We next proceed to make a bimanual examination of the prostate. This is accomplished by placing the fingers of the other hand on the hypogastrium and pressing them well down behind the pubic arch, at the same time directing the patient to relax the abdominal muscles. Counter-pressure is made by the finger in the rectum. If the prostate is decidedly enlarged it will be felt between the fingers of the two hands and can be slightly moved upwards, downwards, or from side to side, like a chronically enlarged uterus, but to a less extent. If it be very prominent in the bladder the outgrowth in that viscus will be easily recognised, and in thin subjects the origin of this outgrowth—whether from the right or left lobe, or from both. In thin or moderately stout patients this method of examination is easily accomplished and is most helpful for diagnostic purposes. In very stout subjects it is less satisfactory. Occasionally we meet with patients who are unable to relax their abdominal muscles; in such cases the examination can only be satisfactorily accomplished under the influence of an anæsthetic.

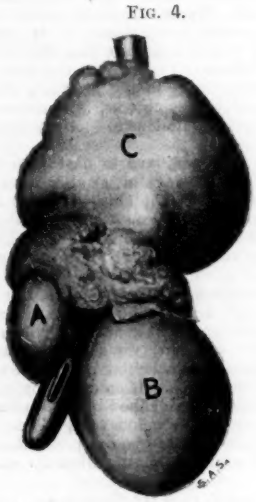
If on bimanual examination the prostate, with the characteristics already described, be felt distinctly, we can at once pronounce the case to be one in which the organ can be enucleated entire in its capsule, no matter what magnitude it may have attained. Prostates weighing from, say, about

FIG. 3.



Prostate weighing 14½ ounces, removed from a patient aged 73 years (Case 106). A, Left lobe, showing an ulcer at D, caused by a vesical calculus. B, Right lobe. C, Saucer-shaped lip connecting the lateral lobes and prominent in the bladder.

FIG. 4.



Prostate weighing 1¼ ounces, removed from a patient aged 57 years (Case 149). A and B, Out-growths in the bladder from the left and right lobes respectively, separated from the main body, C, by a narrow neck.

2 to 6 ounces (Figs. 1 and 2), such as those I show you, are those most easily and rapidly enucleated. But prostates of larger size can be similarly dealt with, though those attaining to enormous dimensions such as these (Fig. 3) present considerable difficulties, mainly through their being impacted beneath the pubic arch, and to the difficulty experienced in reaching with the finger in the bladder the distal aspects of the growth—those in proximity to the rectum and triangular ligament—to separate the capsule from the enveloping sheath.

Let us now contrast the characteristics of adenomatous enlargement of the prostate, as just described to you, with those of cancer of that organ in a more or less advanced stage. The first feature that will strike you on rectal examination in cases of cancerous enlargement is the intense hardness of the prostate, which is almost invariably of the scirrhous type, though occasionally we find soft boggy patches, due to broken-down tissue. Then the outline of the organ will be irregular, the lobes being ill-defined, and the median groove being partially or wholly obliterated. The organ will be nodular and ridged, with deep, irregular, intervening furrows. Occasionally you will come across a case in which the carcinomatous prostate is smooth and globular, like an ivory ball. Most important of all for diagnostic purposes, the prostate will be immoveably fixed in the pelvis owing to the invasion by the growth of the adjacent tissues. Bimanual examination will confirm the existence of these characteristics, particularly the immobility of the organ, but as a rule in cancer of the prostate no great prominence of the gland will be felt in the bladder, the growth invading the surrounding tissues rather than advancing into the bladder, the trigone of which is, however, very frequently involved. You will have as additional aids to diagnosis enlargement of the glands in the groins in advanced stages of the malady, and at an earlier stage small, hard, sago-like grains may be felt per rectum covering the surface of the growth beneath the rectal mucous membrane. These are secondary deposits in the lymphatics coursing in the sheath of the prostate. Then, in the clinical history of the case you will have the rather sudden onset and rapid advance of the usual prostatic symptoms, the progressive and sometimes rapid loss of flesh, the feeling of lassitude, debility, and undue fatigue, the failure of appetite, the typical cachexia, and the pains in the loins, sacral region, and lower limbs, due to pressure on the nerves by secondary deposits in the lymphatic glands, so characteristic of this disease. It is impossible to enucleate a cancerous prostate in this advanced stage, owing to the extension of the disease to the surrounding tissues. In the earlier stages of the malady, however, whilst the prostate is still moveable and the adjacent structures uninvolved, the gland can, and should be, removed. My experience of operation under such circumstances is most favourable. It is frequently impossible, however, to give a definite diagnosis of malignancy before removal of the gland in cases of this kind, though the presence of dense nodules in the prostate, combined with the rapid march of the symptoms, will arouse grave suspicions in the surgeon's mind as to the true character of the disease.

It is, however, when we have to deal with adenomatous enlargements of the prostate of smaller dimensions—say, less than 1½ ounces in weight (Fig. 4)—that the greatest difficulties present themselves as to the possibility of their enucleation entire being practicable. For I may tell you, as the records of my published cases show, that you may find complete dependence on the catheter, strange as it may appear, with a prostate weighing 1½ ounces, 1 ounce, or even less. A prostate of 1 ounce in weight will scarcely feel enlarged per rectum, or even bimanually, unless the patient be very thin. The only way we can determine with certainty the possibility of enucleating a prostate of this size is by the aid of the cystoscope. If on cystoscopic examination we find that there is a well-defined out-growth of one lobe, or marked prominence of both lobes (Fig. 4), in the bladder, the case may be pronounced to be one permitting of enucleation of the gland entire, no matter what its size may be as felt per rectum.

Results from the Operation.

I have now completed 600 cases of the operation of total enucleation of the prostate for enlargement of that organ, the patients varying in age from 48 to 89 years, with an average age of 68½ years. There were 47 octogenarians between the ages of 80 and 89, and 7 patients aged 79 years. The prostates ranged from ½ to 16¾ ounces, with an average weight of about 2½ ounces. The great majority of the patients had been entirely dependent on the catheter for periods varying up to 24 years. Nearly all were in broken health and many apparently dying before operation. Existence was simply intolerable to most of them. Few were free from one or more grave complications, such as cystitis, stone in the bladder, pyelitis, kidney disease, diabetes, heart disease, chronic bronchitis, paralysis, hernia, and in a few instances there was malignant disease of some other organ than the prostate. Such were the unfavourable circumstances under which the operation was undertaken.

In connexion with these 600 operations there were 37 deaths, in periods ranging from six hours to 37 days after the operation, or a mortality of 6·15 per cent. The mortality has been steadily decreasing from 10 per cent. in the first 100 cases to 4 per cent. in the last. The causes of death were: uræmic symptoms due to chronic kidney disease, 16; heart failure, 6; septicæmia, 2; shock, 3; exhaustion (kidneys much diseased), 1; mania (hereditary in 1), 2; malignant disease of liver, 2; heat stroke, 1; pneumonia, 1; acute bronchitis, 1; pulmonary embolism, 1; and cerebral hæmorrhage with paralysis, 1. Though all these deaths are accepted in connexion with the operation, in not more than half the number can the fatal result be attributed thereto, the remaining deaths being due to disease incident to old age and unconnected with the operation. In 108 cases vesical calculi were removed at the same time; but all the deaths in these cases are accepted in connexion with the prostatectomy, none being put down to the suprapubic lithotomy involved.

When I speak of success attending the operation I mean an absolute and complete success as in the two cases brought before you to-day, the patient regaining the power of retaining and passing his urine naturally, without the aid of a catheter as well as he ever did. There is no relapse of the symptoms, no contraction at the seat of operation leading to stricture and no fistula remaining. Further, there is no diminution in the sexual power after the operation.

ON THE

DISCRIMINATION OF UNRECOGNISED DISEASES AND ON A DISEASE OF OVERCROWDING IN SHIPS, ESPECIALLY AT MALTA.[1]

BY W. E. HOME, B.Sc., M.D. EDIN., M.R.C.P. EDIN., D.P.H.,

FLEET SURGEON, R.N.; FORMERLY SENIOR MEDICAL OFFICER IN THE CHANNEL FLEET.

IT is sometimes interesting to take a famous book by one of the old masters of medicine and read in it to see whether it may not still have some lesson for us now. What books of these survive were written by very capable men; that is why they have not been forgotten, and the talent which these elders brought to the study and solution of their problems will often show us a good method for attacking ours of to-day.

The classics in my branch of the profession are Pringle, Lind, and Blane. Sir John Pringle (1707–82), physician-general to the forces, and later president of the Royal Society, in 1752 brought out his great work on the "Diseases of the Army." He was the "founder of Military Medicine" (J. F. Payne), the first to prevent dysentery and hospital fever. James Lind (1716–94), for 35 years in charge of Haslar Hospital, proved the usefulness at sea of distilled water and of lime juice to prevent scurvy; 1754, "Treatise on Scurvy"; 1757, "Health of Seamen." Sir Gilbert Blane (1749–1834) went to the West Indies as Lord Rodney's private physician, but, winning the admiral's good opinion by professional skill and personal bravery, was made physician to the fleet. He got lime juice made an issue, which Lind had never achieved, and I believe it was his representations that got a uniform established for our sailors

[1] A paper read before the Epidemiological Section of the Royal Society of Medicine on March 26th, 1909.

to prevent typhus fever. In 1786 he published "The Health of Seamen."

In the natural history of those days the classification of animals and plants was artificial; not enough knowledge had yet been acquired to make a natural system possible. And it was the same with the diseases. An etiological classification, such as we attempt to-day, was unattainable; all the differentiation they had was clinical, by signs or symptoms, or by the regions or organs attacked.

Pringle knew intermittents, diagnosed pneumonia, pleurisy, and consumption; the other diseases which he reports from his field hospital in the spring of 1743 are: rheumatic pains, with more or less fever; inflammatory fever, without rheumatic or pleuritic pain; hard coughs without fever; fluxes; some inflammatory symptoms. "Fevers" were the most numerously occurring of all diseases. Lind reports that 2174 cases were admitted to Haslar Hospital in two years (1758–60)—38 per cent. of all admissions. Blane reports 806 cases in Rodney's fleet in 1782—44 per cent. of all cases added to the sick list. The exanthemata were not included, but even so the class of "fevers" was so large that it had to be broken up somehow, and with the knowledge which they had they could only group their cases by the time and place of their occurrence. Thus Pringle and Francis Home, my great-grandfather, who both served with the army in the Low Countries in 1740 onwards, and both wrote books about their service—books which are in the society's library—grouped the fevers year by year for descriptive purposes (fever of 1741, fever of 1742, &c.), and Blane in the West Indies follows quite the same method.

I submit these facts to this section, whose study is the natural history of disease with a view to its prevention, that it may be realised why prevention in those days lagged so behind. It is difficult to form a consistent theory of the cause of a single disease—how impossible to analyse the causes of a mixed assortment of diseases—and I desire to simply restate what everyone here knows, that a good classification of diseases is a great help towards prevention. As we now know that phthisis, lupus, and tubercular meningitis are not separate diseases but only separate evidences of the same *noxa*—the tubercle bacillus—a case of either reinforces the demand for the prevention also of the other, as the harmonics strengthen the fundamental note in a chord.

Now from that great mass of fevers which the old observers report there have been extracted and identified several groups—malarial remittent, for example. 70 years ago typhus and typhoid fever were discriminated after long search; Bruce lately extricated the Malta fever conveyed by goat's milk, and there are others; but we who go abroad still find cases to which we cannot satisfactorily apply the names we see in the text-books, fevers for which we do not know the cause.

It was a great advance to separate typhoid from typhus fever; difficult clinically, and for two reasons. Unlike other diseases, which, similar at first, seem to differentiate themselves as they progress, these two fevers end in a very similar typhoid condition. This they were particularly apt to do in the olden days, when, as you will remember, patients in fever hospitals had only 600 cubic feet of space. Ventilation was thought harmful, and venesection must, one thinks, have caused all patients to present after long illnesses a similarly exhausted appearance. There was another and a greater difficulty. These fevers were apt to occur in different places each by itself, and as communications were less free and frequent then than now authors may not have seen them both. I have always been told that in the "thirties" of last century there was animated controversy between the schools of Paris and Edinburgh about the natural history and treatment of "fever," each thinking the other unwise, or at least lacking in clinical acumen, whereas both were right, though each saw only his own side of the shield; "fever" in Edinburgh was typhus, "fever" in Paris was typhoid. That neither of them would give in did both schools credit, for so we came to know the truth.

This raking amongst the embers of forgotten controversies will be of benefit to us if it makes us reflect and inquire whether such controversies are not going on amongst us now. Is it at all possible that among the less well-known and unnamed fevers of to-day there are not some as distinct as those others, which too, when discriminated, might be in their turn prevented? Public health has so greatly improved that we can expect no so marked results as followed the recognition of typhus and its subsequent prevention. Still, it may be worth our while to seek out and differentiate these others that in time, as I say, they may be stopped. It is a little novel this idea of going to look for a new disease; they are generally discovered more or less by accident. To pick out a new disease is much as if one were in a club where habitually one met some 30 or 40 Englishmen, but one night there appeared a Scotchman, and would one notice him? Essentially different he would be, but in appearance he might be very like an Englishman, or he might be very different. If one had no warning to expect a different sort of stranger one might class him in one's mind with some other member one knew like him, unless he spoke and failed us in English, which would be a sort of Widal reaction to test him.

Each new case as we see it we class with some others we have already seen, unless something very striking shows it to be peculiar, or unless many others suddenly begin arriving far more like one another than like any of those we have known about before. Each of us looks at cases from the point of view to which his own experience has conducted him, and his comparisons may be as different from those of his neighbours as was that of the little town-bred child on her first train journey in the country, who amused us all as we passed some sheep by her excited surprise at the "funny dogs those are." And probably that is how we shall meet a first case of a new disease. It will be "a funny case," "an odd case," an unpaired case that is. It is these odd cases, these residua, that repay investigation. That is how radium was found—in residues. That is how they find gold at the mines.

As to the local assignment of "fever" of which I spoke I was much struck with this in the "nineties" on the East Coast of Africa. Durban fever used to be talked of in the "seventies." In the "nineties" you heard no more of Durban fever. Durban had got settled, had sown, reaped, and was done with its wild oats. A reputation for fever now attached itself to the ill-built, untidy, or sparsely populated places up the coast—Beira, Chinde, Quilimane. These fevers all seemed to be malarial, but in those days we had no exact diagnostic, and we had advantage from calling these cases by names of the places where they originated, for we never knew when some other fever might appear nor whence—some other fever terrible as the dreaded blackwater fever—and the name it got would be a warning to the newcomer to give that place a wide berth if possible.

In the early "nineties" we classified fevers into (1) zymotic; (2) continued; and (3) malarial (which might be remittent or intermittent). Zymotic in East Africa (except dengue) we did not see, continued meant typhoid, intermittent are a well-marked class, and all other fevers were returned as remittent and ascribed to malaria, or in those days the same thing—climate. The preoccupation of every surgeon on this East African station was "fever"; it was climatic. You could not tell when it would visit your ship or when it would leave. It was climatic, so nothing could be done to prevent it, except keep out of the sun, but it was good to see your ship as clean, dry, and well ventilated as possible, for that increased comfort. When I joined the station I was very anxious about those men, obviously the most exposed to the climate, those who went away in boats cruising after slave dhows, and proposed to my captain I should medically examine them before they started and only allow the healthiest to go. He, however, who had been on the East Coast for a year, laughed at my anxieties and assured me that they were unnecessary. I could not see how this could be if the fever was, as everyone said, due to climate, but I did not press the matter, and I found the captain's view correct, for the fever, after all, was not really due to the climate directly at all.

To anyone reading the reports on the health of the East African station yearly appearing in the Blue-books from 1880 onward it must shortly become evident that within the group remittent fever were included cases of two quite distinct diseases—the first a true malarial remittent, not picked up aboard ship, but always contracted ashore, and generally, almost invariably, by sleeping ashore 10 to 15 days previously. See THE LANCET of Oct. 28th, 1899, where I repeat from the Blue-book for 1887 the history of a party of ten who passed the night ashore. The seven men slept and all got fever; the three officers who did not sleep escaped, for, being always kept awake by the mosquitoes and always brushing them off, they prevented any single mosquito from settling and so infecting them. For this fever quinine was

specific. The second fever, on the other hand, appeared to have its origin exclusively in ships; neither in boats, whose crews continuously escaped it, nor ashore; nor did it spread from ship to ship; nor was it carried by wind. It might occur in ships at Zanzibar, but in no relation to the occurrence of fever ashore. In 1880 it was severe on H.M.S. *London*, the stationary ship at Zanzibar, when Zanzibar was healthy. In 1881 it attacked both ships and shore. In 1883 the epidemic in the *London* did not spread to the ships near her, so the infection was not carried, or at any rate did not spread, by wind. Further, it used to be noted that the fever diminished in the *London* when a cool wind blew off shore. In 1887 there was a bad season ashore, but ships suffered little. In 1884 it was reported from the *Euryalus* at Massowah, when it specially attacked the boys. She was described at the time as overcrowded, and those of her ship's company who were landed in Massowah were healthier than those who remained aboard, so it was not Massowah which gave it to them. This fever did not attack the natives serving on board ships, and it was noted to be specially prevalent at Zanzibar during the great rains in the first quarter of the year, both of which facts were held to prove its climatic origin. My view is that it was due to want of ventilation and overcrowding in the ship herself. It occurred in damp ships like the *London*, which was so full of rotten timbers that she was broken up in 1884. It occurred in the great rains; it occurred in ships which, with full complement, had been quite unnoticeably healthy in harbour but were sent to sea in bad weather, for in each case ventilation was impaired. In Zanzibar harbour in dry weather every port and scuttle is wide open and the awning, high up and horizontal, allows air to escape from the ship as freely as possible. At sea in bad weather the scuttles, &c., are closed, and in harbour during the great rains ports are half closed and the awnings sloped, imprisoning the air inside the ship. I did not know all this in 1895. I wish I had. That the natives escaped it too does not prove it was due to the climate. They had far more fresh air than any white man—they lived on the booms, a sort of flying deck above the upper deck, out in the open air—and this may equally explain their immunity, and now you see why the men away in boats escaped. Every now and then one of them would sleep ashore and get malarial fever, but more fortunate than their envied neighbours, with all the comforts of a ship, who with these also had the risk of infection, the boats' crews were thoroughly exposed to the climate and so remained healthy.

The fever of which I am speaking may be described as an asthenic pyrexia without special features. After two days' malaise and headache the patient would get nausea, retching, and vomiting; temperature 101° or 102° F.; pulse about 100; skin moist; bowels confined; headache, pain in loins, and sometimes even already marked exhaustion. Stage of advance: Temperature 103° to 105°; skin dry, often pungently hot; eyes suffused, headache, restlessness, perhaps delirium; tongue dry, thirst, anorexia, perhaps much vomiting; bowels confined; pulse and respiration fast; symptoms worse at night. We thought that this proved the fever to be, as we called it, remittent. I nowadays often wonder if it was due to the diminished ventilation, due to the stillness, the airlessness of a tropical night. Convalescence: Great debility, skin clammy; appetite slowly returned. Complications: Hæmaturia reported by one medical officer; I have known it followed by insanity; definite and routine sequelæ there were none; duration ten days, and relapses may occur. Treatment: Quinine is a good tonic but no specific.

In the *Archives de Médécine Navale* for May, 1895, is noted a report on the fevers of Massowah undertaken by medical officers of the Italian Navy, who found three different fevers: (1) Malaria cases, imported only; (2) an indefinite fever, no germ isolated; and (3) typhoid: (*a*) abortive—*Bacillus typhosus* in blood from finger; (*b*) developed. That reported from the *Euryalus* at Massowah in 1884 may perhaps be included in their No. 2. I was in those days serving at Zanzibar in the *Swallow* sloop, and we tried to get her thoroughly aired—windsail in every hatch and windscoop in every scuttle; we all felt this did us good. The old proverb is that a smart ship is a healthy ship, and she was pretty busy as well as pretty that *Swallow*, but I regret that I cannot give statistical evidence of her health. We got a great deal of malaria when landed, but we thought we did not have so many fever cases as usual. The lesson of these East Coast fevers may be thus stated. 1. The importance of accurate diagnosis; no prevention of the ship fever could be other than blind so long as it was supposed due to malaria or climate which you could not change. If we had dreamed it was due to stuffiness of the ship, I am sure the captain would have had the men sleeping away in boats or going route marches to let the ship dry, or something would have gone on being done till the right thing was found. 2. The importance of not being led astray by popular etiology. 3. The little direct influence on disease of that resultant of meteorological conditions called climate.

I must now ask you to consider another example of inaccurate diagnosis which also hindered prophylaxis and did much more harm, as there were far more people concerned. I now refer to what we called Malta fever. When I entered the service in 1885 the crux of the Naval Medical Department was, as we who then entered very soon learned, Malta fever—a great many cases for which we had no satisfactory treatment, with many invalidings though few deaths. No prophylaxis could be hopefully considered, for the disease we knew was due to the climate of Malta, which we could not alter, and, besides (here came in the mischief of faulty diagnosis), it attacked the soldiers as well as us. This fever was not described in the text-books; there was no book about it; we believed the people who had seen much of it knew something about it, but it was surprising how little they could tell us. In January, 1886, I was told off to the *Alexandra* in the Mediterranean, and naturally searched for all the information I could get. The most weighty came from the Inspector-General at Haslar, who had had long experience of the Mediterranean, and he kindly talked to me about this fever, concluding by advising me to keep a great-coat in our mess boat to protect me in going off to the ship at night. In fact, the only prophylactic then known was—avoid chill. We of the new ship's company for the *Alexandra* were sent to her from Portsmouth on Feb. 20th in H.M.S. *Tamar*. Reaching Malta on March 1st we were turned over to H.M.S. *Hibernia* for two months until the *Alexandra* had refitted. The *Tamar* was crowded, and in our own ship's company we had a dozen cases of pyrexia, indistinct at first, but later becoming pneumonia or bronchitis, and similar cases continued to occur after we left her until the end of April, when these cases were replaced by others called fever.

Marston[2] in 1860 wrote a paper on fevers at Malta, which appeared in 1863 in the Army Medical Department Report for 1861. He classified them as simple continued, typhoid, and gastric remittent. This classification practically it was that was followed in our returns in 1886. The simple continued fevers were the slight cases. Some medical officers there were who thought this a definite disease like typhoid. Others thought it a limbo for slight cases of fever due to undiscriminated infections; all slight cases of remittent and abortive attacks of typhoid, for example, fell into this group.[3] The prolonged and more serious cases were divided between typhoid and remittent. Those with more definite abdominal symptoms, diarrhœa, three weeks' pyrexia, and then lysis, and especially if they had a fatal issue, would be called typhoid, particularly if rose spots had been seen or a post-mortem examination had shown the ulcerated Peyer's patches. The rest that could not be called typhoid would be classed as remittent, and were of all degrees of severity, from the uncertain week-long pyrexia, which would have been called simple continued had not the temperature been so high and the symptoms so severe, to the well-developed case one sometimes saw with a prolonged weary clinical course without strongly marked features but going on relapsing, sometimes with well-marked rheumatic sequelæ (this I used specially to note in cases seen in the military hospitals), and a death-rate of 2 per cent. Except the typhoid, we thought all these fever cases to be the same and peculiar to the island. They were returned as

[2] I have not emphasised Surgeon-General Marston's work but in my mind it was obviously all-overshadowing. He discriminated in 1860 the Malta fever of Bruce from typhoid fever at a time when clinical methods only were available and so prepared the clinical grouping which made Bruce's work possible in 1886.

[3] Simple continued fever is by many considered to be abortive typhoid. It is reported, however, by Surgeon J. G. Fowler, R.N., that the *Powerful's* landing party of 250 men who went through the siege of Ladysmith suffered from this fever equally whether below or above the age of 25 years. This is quite a different age-incidence from that of enteric fever (Blue-book "Navy Health," 1899, Appendix).

remittent, but in conversation we called them Malta fever. Our attention was rather focussed on the bad cases, of which I saw a good many in my first week at Malta, when sent to do duty in the Naval Hospital and later at the Valetta Hospital, where was living Sir David Bruce, who showed me more.

We were then at Malta seeing a quantity of fever cases really undistinguished except by severity between slight febricula and a four or five months case of Malta fever, so I think there is a little excuse for us that we did not realise that they ought to be broken up into groups. Another difficulty I will tell you in a minute. None of us knew how these cases came, but the most frequent hypothesis was dirt. Bruce talked of soil saturated with the filth of centuries. Gipps, in his paper read to this society, ascribed the fever to the sewage contamination of the harbour water, and noted that ships which were suffering lost it soon after leaving Malta and did not pick it up in other Mediterranean harbours. Thinking it over again now, I feel that the army had more "rheumatism" as a sequela to their "fever" than fell to the cases in the service afloat. I did notice then that young soldiers one used to go and see at Cottonera Hospital had a rheumatism following fever much more crippling than that which our patients experienced. Here was the hint of a discovery which, alas! I did not make in time. What masked this observation, what gave our people rheumatism as a sequela, was that cases sent to our hospital sometimes got fever there (popular lay opinion said every case) from the milk—as we now know, but did not then,—and these cases might very well develop rheumatism even if none had it in ships from their primary infection. Then cases were called remittent fever which obviously were not so. I remember Inspector-General Todd, then senior surgeon in the *Alexandra*, showing me that a pyrexial case which I thought to have intractable Malta fever was really suffering from inflammatory fever and was at once cured by the opening of an abscess, and there were other people then just as young as I.

In 1891 I was sent to do duty at the Admiralty for a fortnight, and, having access to records, read up many reports on this fever, and that winter at Inverness, in medical charge of but a small ship's company, had time to write a report on Malta fever for the journal we send into office every year. This report, amplified, became, in 1895, my thesis for the degree of M.D. in Edinburgh. In that thesis I tried to establish, by investigation of its epidemiology, that Malta fever was due to overcrowding and that it could be prevented by improving ventilation. So many lines of investigation seemed to lead to this same conclusion that I was confident this investigation of mine was sound. When, therefore, the Malta Fever Commission was being appointed I sent Bruce a copy of that thesis to help them. He said he would lay it before them, but indicated that in his opinion it would not advance them much. In 1906 Bruce's Commission had stopped Malta fever, and I found the surgeon I had got in H.M.S. *Exmouth*, G. M. O. Richards, a very capable officer, knew about the recent investigations in regard to this fever, he being just back, too, from Malta, and I trusted my paper to him. He read it, indeed, but to my vexation he, too, said it was of no particular interest, adding that these older papers were quite unimportant now and gave no enlightenment, since the cases on which they were based could not—it was not possible they could—have been accurately diagnosed in those days.

I may explain here, as some members may not remember the dates, that in 1886 Bruce found in the spleen of fatal cases of Malta fever a micrococcus, the *Micrococcus melitensis* as it is now called, and by inoculating this into a monkey he proved it to be the cause of the disease. Several of us then went about pointing out the great cleverness of the medical profession which could find the cause of a disease so troublesome. We were, however, only met by our lay friends with biting remarks about the uselessness of knowledge of a disease which did nothing to help its cure, and our arguments that advances in knowledge were valuable in themselves had few takers. However, Bruce's discovery had, at least, made the accurate diagnosis of this disease possible in the post-mortem room, which was something, though otherwise it seemed to have been of no practical benefit, and so things remained for 10 years, until the Widal reaction was discovered. Sir Almroth Wright soon noted that the serum of Malta fever cases clumped its bacillus alive or dead. In about three years this reaction became generally used in Malta. Bruce's discovery had now led to the diagnosis of cases during life, but had certainly not yet improved treatment. In 10 years more we find the Commission hunting all over Malta for this micrococcus, finding it in goats, then in their milk, and so, in July, 1906, this fever was stopped, and there practically has been none since in the army or the navy. And it is better to prevent a man from wanting treatment for a disease than to give him, sick, the best treatment. Does not this all show that it is worth while to obtain any increase in knowledge, for trifling as it may appear at first there is no knowing how far-reaching it may prove; 1886: micrococcus found and diagnosis possible in post-mortem room; 10 years on (1897 to 1900): serum reaction and diagnosis made possible of cases during life; 20 years after (1906): fever stopped and no diagnosis required any longer. The history of the prevention of this fever is particularly interesting. It was so restricted in area and with so little to differentiate it in life from other fevers, that one cannot see how it was to be investigated unless Bruce had found the micrococcus—a specially hard nut for us of this society, who, when we hear of a disease, think of it as something to be prevented. How long would it have been before someone thought it worth while to trace the effect on each of the consumers during a month of the milk of each of a flock of 20 apparently quite healthy goats? Beside such a toilsome research, even Dr. Davies's patient and skilful unravelling (in Vol. XVII. of the Transactions of the Epidemiological Society) of the milk routes by which typhoid came to Clifton seems quite easy.

I will now go back to Surgeon Richards's opinion on my thesis. It was quite clear that he was correct; that thesis of mine did seem valueless. Malta fever was due to a specific infection of goats' milk. Whatever could I have meant by alleging it was due to faulty ventilation and overcrowding? Another thing puzzled me much. What were we in the service afloat doing with all that Malta fever from infected milk, when I suppose no milk was drunk on board ship except by the officers' messes and by their servants? The men never drank milk to my knowledge unless they were on the sick mess. Where did they get the fever?

In writing the results of overcrowding for a section of a book on naval hygiene which I was planning I recognised that the Malta fever of which I had written in my thesis was one of these diseases of overcrowding, and then became sure that in Malta, about 1886, there were at least two fevers unknown to the text-books of that day—one *Micrococcus melitensis septicæmia* of Bruce, due to infected milk, which specially attacked (1) people ashore, (2) the army, and (3) patients of the service afloat who got milk in sick bays or in hospital. This, by much the more important of the two, is the fever commonly known as Malta fever. The other fever which also occurred mainly, though perhaps not exclusively, at Malta, was a fever of overcrowded ships, attacking, so far as we yet know, only the navy, and of them only the crews of certain ships. This fever has since gradually decreased, till now the structure, management, and equipment of ships have so improved that one hears this fever has completely disappeared. Bruce concerned himself only with the first; I concerned myself only with the second. Again the case of opposite sides of the shield.

And now I must try to show you that some cases were due to overcrowding. You might think that overcrowding could not but be recognised and rectified. To prove how much overcrowded a ship could be without people clearly recognising that it was so I would quote a paper read to this society in 1863 by Dr. Smart, then an Inspector-General, on epidemic pleuro-pneumonia in the Mediterranean in 1860. The *St. Jean d'Acre* was commissioned in 1859, and by the end of June had reached the Mediterranean. She was considered overcrowded. The ship's company, 850 of them, slept in hammocks on the lower deck, each man having only 28 inches laterally, so that in harbour they formed, as the doctor, Edmonds, said, a compact mass. He notes that on April 8th the temperature of the air below the hammocks was 60° F., while that above was 81°. So considerable a difference produced strong draughts, which led the people near the ports to close them and thus made the ventilation worse. The lower deck is also reported as too damp from over-frequent washing. 153 cases of fever were sent to hospital in her first six months at Malta—continued fever, tending to become "remittent, many assuming a typhoid

character." In fact, exactly like ours of 1886–89. She was sent to Corfu and improved in health, but returning to Malta three months later became, as the old word was, "sickly" again at once; in the succeeding nine months, though the overcrowding of the lower deck was a little reduced, 100 men being taken off it, there were noted these cases:—

Bronchitis	7	Pleurodynia	20
Pleuritis	19	Cachexia pulmonum (slight cases suggesting phthisis)	117
Pneumonia	13		
Hæmoptysis	7		
Phthisis	102	Total	285

Things were not quite so bad as this suggests, for many of the cases were subsequently decided not to be phthisis, though they resembled it. But six cases did die. It is said that some new class of recruits had been taken in the ship, subjected to medical inspection less rigorous than usual, so I suggest that she was suffering from overcrowding with a considerable phthisical infection larger than usual. Overcrowding was indeed thought possibly a cause, but it was not definitely decided to be the cause. Decaying wood and foul bilges were also held to blame. No one was convinced that overcrowding was the cause. One wonders why all these men were put to sleep on the lower deck when there were two other decks higher up, and with better ventilation, almost untenanted. I expect this was a legacy from the great war and done to leave the guns on those other decks unencumbered in case of a night attack.

Now to take examples of this remittent fever in the Mediterranean, consider the *Royal Oak* in 1866. In previous years she had suffered much from fever and was now in June at Malta, and frequently sending cases of fever to hospital. "On June 18th the lower deck was relieved of 130 men, and from that time a decided improvement set in." At the same time the ventilation of the lower deck was much improved, and at the end of September the sick list was half that of the previous year. The sick rate, which had always previously increased in the third quarter, now fell off, and that for the Christmas quarter was the lowest hitherto in the whole commission of the ship.

In the "eighties" fever is frequently reported from the Mediterranean, and the annual reports generally state the number of cases in the ship that suffered most. These below are the big ships:—

Year.	Ship.	Cases.	Percentage of complement.
1882	*Monarch*	149	30
1882	*Superb*	136	20
1883	*Inflexible*	29	6
1884	*Superb*	124	20*
1884	*Alexandra*	82	12
1885	*Alexandra*	83	12
1885	*Téméraire*	60	10
1886	*Alexandra*	64	10
1887	*Alexandra*	70	10
1887	*Dreadnought*	11	2½
1889	*Dreadnought*	13	3
1890	*Agamemnon*	39	10

* Specially noted as due to Malta

It is to be presumed that those not mentioned suffered less. Now anyone acquainted with these ships will divide them at once into two groups:—

(1) Incidence 30 to 10 per cent.	Per cent.	(2) Incidence 10 to 2½ per cent.	Per cent.
Monarch	30	*Inflexible*	6
Superb	20	*Dreadnought*	3 to 2½
Alexandra	12 to 10	*Agamemnon*	10
Téméraire	10		

No. 1, with higher incidence, are called central battery ships. They have hand-worked guns and large complements of men required to work them and smaller space per man. No. 2, turret ships with few and power-worked guns, small complements, and more room, had small incidence. I will compare two of them in which I had the good luck to serve—*Alexandra* and *Dreadnought*.

	Alexandra.	*Dreadnought.*
Displacement	9800 tons	10,000 tons
Guns	12	4
Complement	750	450
Tons per man	13	22

The *Alexandra's* men were carried on three decks, so you can easily see that those sleeping below must have had less air than the men had in the *Dreadnought*, where very few were on a second deck, and those had artificial ventilation. The *Dreadnought* was much drier than the *Alexandra*. When I went to her I took over some clothes that in my cabin in the *Alexandra* were threatened with mildew, and this in my lower deck cabin in the *Dreadnought* was killed by the warm dry atmosphere.

We had a very interesting experience in the *Alexandra* in 1886–89. She was kept throughout the commission as clean and dry as possible. Her first lieutenant (now Admiral), F. S. Inglefield, painted the "flats" or lower deck white to show up the dirt. These flats were washed once a week with warm fresh water and carefully dried up immediately after; a deck-cloth was then put down, and this was sent ashore at the end of the next week to be washed to save dampness on board. For the first two years she was only cleaned by candle light, and in each year you see she had 10 per cent. of the men attacked with fever. Before the third year the ship was fitted with electric light, and now not only could a higher standard of cleanliness be attained but there was less damp and dirt from the burning candles. A boiler was always alight to run the dynamo, and what with the furnace drawing part of its air from the flats and so improving the ventilation, and what with the heating of the ship by conduction from that boiler, the flats became beautifully sweet, clean, and dry; the micro-organisms that used to grow there were removed or killed, we had only 3½ per cent. of the men this year down with fever, and we were no longer pilloried in the Blue-book. It is unsafe to over-minutely compare two years with one another, for one does not know quite how much time was spent at Malta, and it was at Malta that the ship suffered from this fever.

It is difficult to assign exactly the importance of humidity in the factors of health; it comes in in part directly as favouring the growth of micro-organisms, in part indirectly as a measure of insufficient ventilation. In my early days I thought that humidity must have great importance as a cause of disease, and in my journal for 1888 I was able to put in a note showing on two years' observations that in the *Alexandra*, with 700 men, at Malta in the winter, there was always a case of sore-throat at the morning visit if there had been recorded during the previous 24 hours a humidity of or above 80 per cent.[3] I thought then that the relation was direct, but the high percentage humidity was certainly an evidence of still weather in which ventilation was at its worst. There was a popular belief in the fleet that the fever was more frequent in still weather.

The experiences of H.M.S. *Trafalgar* in 1891 and 1892 are of great interest. She was a turret ship, but of a new pattern, with a secondary battery, the men, consequently, being more shut in than in the *Dreadnought*. The *Trafalgar* was in Malta Harbour near or in dry dock from Feb. 10th to May 5th, 1891, and returns 159 cases of continued fever, 85 of remittent, and 24 of enteric from a complement of 600 men. The fever rapidly increased from the beginning of April. The next year she was to spend the same period in dockyard hands, but a definite effort was made that there should be no fever this year. Windsails were hoisted everywhere possible, every attempt was made to secure cleanliness, dryness, and thorough ventilation of the ship. Also the men were daily landed by watches and sent to Corradino Parade Ground to air them and give the ship a better chance to dry, and while they were in dry dock this year no fever cases occurred.

But if this fever is only due to overcrowding in a ship why should it have been called Malta fever? It has, in fact, been reported from elsewhere, as, for example, from the Channel Fleet in 1884, where Inspector-General (then Fleet-Surgeon) G. Maclean, who afterwards came to the *Alexandra*, drew attention to the number of pyrexial cases which came on the list as soon as ships went to sea and had to close their ports and spoil their ventilation, and he notes how closely the

[3] Having obtained statistical evidence of a relation between humidity and the occurrence of cases of disease, I was anxious to find other observations on the subject. For some years I sought in vain. I first found them reported by Lind about 1750, quoted by him from a thesis, "De Febre Intermittente," like mine submitted to the University of Edinburgh for the degree of M.D., but about 1750, and by my great-grandfather, Francis Home, already mentioned. He afterwards became a professor in the University and President of the Royal College of Physicians there. He is supposed to be the first person to describe diphtheria; he called it croup. (See Löffler in Nuttall and Graham Smith's "Diphtheria.")

cases that then present themselves resemble those known in the Mediterranean as Malta fever. These cases were more frequent at Malta than elsewhere. Why? There are three reasons:—

1. The biggest ships of the navy, those with largest complements, were at Malta, and it was generally numbers of cases, not percentages, that were reported and impressed people. The big ships of those days were only in the Channel and Mediterranean, and having only natural ventilation were always worse off than the small craft, the mess decks of which are quite close to the outer air.

2. The temperature at Malta was such that the ventilation of these large ships was there at its worst. When air is breathed it is heated, it is also made moister, and by each of these changes its specific gravity is lowered—that is, the expired air is lightened and these changes make it rise away from us. But it also has its lighter oxygen replaced by heavier carbonic acid, which tends to make it denser. The ultimate specific gravity of the expired air is the resultant of all these changes and varies at different temperatures. Dr. Shaw, director of the Meteorological Office, in his recent most valuable book, "Air Currents and the Laws of Ventilation," has calculated 81° F. as the temperature about which these processes balance one another, so that the difference between the specific gravity of inspired and expired air vanishes. As he says: "At such a temperature a crowd would inevitably be poisoned by its own breath." Now you may remember that 81° F. was the temperature of the air which Dr. Edmonds at Malta found the tars breathing in the *St. Jean d'Arc* during her great epidemic.

3. The physical conformation of Malta Harbour, so different from that of any other harbour with which I am acquainted, also helped to spoil the ventilation of the ships by keeping off them any possible breeze there might be. The Grand Harbour at Malta is wonderfully convenient for seamen. There is quite deep water close alongside, and I doubt whether ships of the deepest draught are anywhere else in the world so closely packed together, and as the water close alongside the shore is so deep ships are able to lie just under the high fortifications, another most unusual feature of this harbour. These great high walls shut off from the ships any little breeze there may be which might give us a little change of air on board in a warm night.

A study of the Blue-books will, I think, convince anyone that the incidence of "fever" was greatest on ships lying at the top of Dockyard and French Creeks and in the dry docks. Such was the experience, anyhow, of the *Enterprise* in 1866, *Monarch* and *Condor* in 1882, *Superb*, *Iris*, and *Carysfort* in 1884, *Agamemnon* and *Polyphemus* in 1887, and *Trafalgar* in 1891. In 1887 *Carysfort*, doing same work as in 1884, refitting in the summer, escaped fever because, as I think, the cholera scare of that year sent her out to Bighi Bay to lie, very inconvenient for her work and costly to the country, a cause probably too of great vexation to her people, but at the same time salutary. The case of the *Trafalgar*, in 1892, I have mentioned. Besides, ships suffering from fever in these localities have been relieved by a shift to a more airy billet. Another *Trafalgar*, in 1863, lost the fever when moved from French Creek to Bighi Bay, as did the *Enterprise* in 1886 when moved round to Sliema. A move of this sort seems generally to have done good, perhaps, of course, because it would not be mentioned unless benefit had accrued. And a move of this sort seems to do more good than a trip to sea, for the move to sea may be made in bad weather when the ports are closed and ventilation the more diminished. To return to the instructive vicissitudes of the *Alexandra;* in June, 1887, she had much fever, and leaving Malta we cruised up the Italian coast, but we did not begin to lose it, nor the patients to thoroughly and clearly improve till we got to Golfo d'Aranci in the N.E. corner of Sardinia, where a strong breeze (force 4 to 5) blew through the ship every afternoon.

What I hope you now recognise with me I may shortly state: that in Malta, 1886–89, there were two fevers unknown to the text-books—one, Bruce's *Micrococcus melitensis septicæmia*, commonly called Malta fever, attacking people who lived on shore or drank milk, included amongst these last being patients sent to hospital from the service afloat; the other, this fever of overcrowding on board ship, only attacking the navy, and attacking it in other places than Malta, but most conspicuously at Malta, because there were there lying in a particularly stuffy harbour, at a specially dangerous temperature, a numerous fleet of our largest ships.

Bruce was then concerning himself with his fever only, I specially with ours, while Gipps, working with Bruce at bacteriology, was involved with both. It is distressing to think how much good Gipps and I might have done at that day in earlier prevention if we had not fixed our attention so much on the stagnant filthy water of the harbour and had given more thought to the harbour air. I have taken up your time for too long. In conclusion, I would like to tell you that the management, equipment, and construction of ships have so much improved that this fever of overcrowding is not likely to recur in any considerable degree, even in Malta. The improvement in the health of the service is manifest. This society will readily, I suppose, accept phthisis as a measure of the degree of overcrowding. In the *Alexandra*, 1886–89, we had, per 1000 men per annum, eight cases of phthisis; in the *Galatea*, in Home Fleet, 1901–02, six cases; and in the *Exmouth*, 1905–07, the score had gone down to two. I am sorry I cannot tell you the sick list of the Mediterranean Fleet, but in 1901–02, in Home Fleet, the number generally off duty sick and in hospital was 4 per cent., but a new class of ships then came in, and in the Channel Fleet, 1905–07, the *Exmouth*, with flag of Sir Arthur Wilson, being flagship, the average percentage sick and in hospital was only two, and this, in the same climate, halved in four years. The *Exmouth* class had larger cubic space and corticine on the decks. They were the last class without artificial ventilation for the mess decks. So I expect that in new fleets of newer ships you will soon hear of still further marked reductions.

NOTES ON A FATAL CASE OF SPLENOMEGALIC POLYCYTHÆMIA (ERYTHRÆMIA).

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SOME few cases of this "new disease" have been recorded lately, and a very full and descriptive account of it was given by Professor W. Osler in THE LANCET of Jan. 18th, 1908 (p. 143). In the following case the cardinal symptoms of the disease were exhibited in the most marked manner; but the complications of chorea and general thrombosis, which brought about a fatal termination, have not, as far as I know, been noticed before, and I venture to think, therefore, that they are worthy of record. In a considerable number of the cases cerebral hæmorrhage appears to have been the cause of death.

The patient, a married woman, aged 34 years, first came under my care in October, 1905. She had been seen a few times by my locum-tenent, whilst I was away on my summer holiday, for what she thought was a miscarriage, but which was evidently only a rather profuse period after an absence of menstruation for about four months. When I saw her this had ceased, but I found hæmaturia, which lasted a few days and was followed by permanent albuminuria. The patient was a thin, wiry woman of a nervous temperament, bright, cheerful, and very active, and she expressed herself as feeling perfectly well. There was nothing of much note in the family history, except that all were "nervous" and that one brother had died young from phthisis. The patient herself had only suffered from the ordinary diseases of childhood. She had never had rheumatic fever, or any other form of rheumatism, chorea, or attacks of tonsillitis. As a girl she had suffered from anæmia. She had never been abroad and there was no history or suspicion of syphilis. She was married in 1900 and lived in the Midlands. Soon after her marriage she began to notice a bluish colour in her complexion; this had gradually become intensified and was always more noticeable in cold weather. It had not in any way affected her general health, but it had led to remarks by her relative and friends and to her being stared at in the street, and this caused her considerable annoyance. Before marriage her menses were rather irregular and they continued so afterwards. In August, 1902, she had a miscarriage, being about four months pregnant. From this time menstruation was even more irregular, sometimes being altogether absent for three or four months and she had seen nothing from May, 1905, to the time when I first saw her (October, 1905).

On examination I found no signs of disease in the heart or lungs; the liver was not felt, but the spleen was considerably enlarged and extended three or four fingers' breadth below the ribs; it was not tender on pressure. The kidneys were easily palpated; they were somewhat moveable and distinctly enlarged. A specimen of urine was sent to the Clinical Research Association and the following report was received: "Sp. gr. 1013; albumin present in considerable amount; a few granular tube casts and red blood discs present. There is evidence of nephritis, suggesting that the hæmorrhage has been associated with some renal condition." The radial arteries were considerably thickened but not tortuous and could be rolled under the fingers. The pulse was regular, about 96 per minute, and very tense. The whole body was of a remarkable colour. The cheeks, nose, lips, ears, and fingers were bluish-red, and the skin of the chest, back, and abdomen was of a uniform deep-red hue. The palms of the hands were also quite red. There was no clubbing of the fingers. Tiny venules were noticeable on the cheeks and the conjunctivæ were suffused. The whole appearance was novel and startling, quite different from anything I had ever seen before. I at first thought I had a case of chronic nephritis with unusual symptoms of cyanosis to deal with, but soon came to the conclusion that such was not a satisfactory diagnosis.

At the end of November, 1905, I sent a specimen of blood for a count of the corpuscles to the Clinical Research Association, and received a note saying that the specimen was useless for examination, as it had not been accurately diluted. A second specimen was sent, and the average of two counts gave the following results: red cells, 9,400,000 per cubic millimetre, and white cells 8400 per cubic millimetre. A note was added saying that "These figures agreed sufficiently closely to prove no mistake had been made in the first count, and that they had not before seen such extreme plethora, but that figures little short of the above had been found by Cabot of Boston in two cases, in which the only signs were cyanosis without evident cause." A few weeks later my friend, Dr. J. J. Douglas of Upper Norwood, kindly saw the case with me and examined the blood. His figures were even higher—viz., red cells (which looked normal), 11,500,000 per cubic millimetre; white cells, 17,000 per cubic millimetre; hæmoglobin, 138 per cent.; colour index, 0·6; proportion of red to white cells 640 to 1. The blood was extremely dark in colour, viscid, and coagulated very quickly.

I now recognised that the patient was suffering from polycythæmia, associated with enlargement of the spleen and cyanosis, and she was allowed to lead her ordinary life again. This she continued to do without feeling ill and with practically no variations in the symptoms till just before Christmas, 1907—i.e., for two years. The cyanosis persisted but was less marked in hot weather, the spleen remained about the same size, and the urine always contained about one-fourth albumin. There was no subsequent attack of hæmaturia, epistaxis, or any other kind of hæmorrhage. Menstruation only occurred at long intervals and was always scanty. During this period I kept her under constant observation and treatment was chiefly directed towards attempts to establish regularity of the menstrual function and to effect dilution and to diminish the coagulability of the blood. For several months large quantities of saline fluid were taken regularly: citric acid, citrates, and iodide of potassium were all tried persistently, but nothing had any effect on the cyanosis, the spleen, or the condition of the blood. At first, and for some time, diet consisted of milk and farinaceous food, but gradually fish, poultry, and a little meat were permitted.

Just before Christmas, 1907, some indistinctness in speech was noticed, and this was attributed by the patient to a crack in a dental plate. I accepted the explanation and allowed her to go to Yorkshire for the Christmas holidays. On her return it was evident that she had chorea and that this, and not the dental plate, was the cause of the imperfect articulation. The patient was, of course, ordered to bed. The left side of the body was first attacked and the leg most severely, but the whole of the body quickly became affected. Almost immediately she complained of aching pain in the left side of the neck, and this I attributed to the choreic movements; in a few hours, however, this proved to be due to thrombosis of the jugular vein, and swelling of the left arm appeared.

As the condition now appeared to me to be serious, I asked Dr. H. G. Turney to see the patient with me. This consultation took place on Jan. 9th, 1908, and I cannot do better than give an extract of some notes made by Dr. Turney, a copy of which he kindly sent me. "Patient is quite clear mentally; talks with animation and without difficulty, except that due to the choreic movements. These affect trunk and limbs alike. There are no signs of paralysis; reflexes are everywhere present and normal in character. There is a strikingly cyanotic tint over the whole body. This tint is not limited to the cheeks or mucous membranes, but is remarkably uniform. The left side of the chest and the whole of the left upper limb are much swollen. The skin here is absolutely purple, the colour being most intense about the infraclavicular region and the left shoulder. Large veins are visible by their deeper colour, and can be rolled under the fingers as solid cords. This consolidation can be traced up the neck along the course of the jugular vein as far as the angle of the jaw. There is no œdema of face, eyelids, mastoid region, or scalp. The venous plugging is not perceptible in the axilla or down the arm. On the right side of the chest the veins are moderately distended, contain fluid blood and pulsate, the pulsation having presystolic rhythm. The hypogastric veins are more visible than usual. The lower limbs are not œdematous. There are large purpuric patches over both knees and smaller ones over the ankles. The venous pressure, calculated by Dr. George Oliver's method, showed a pressure of at least 40 mm. of mercury, as the veins on the dorsum of the right hand did not collapse, even when the limb was held vertically. [There was no thrombosis in the right arm at this time, and it did not appear till several weeks later.] The radial pulse is very firm and tense and does not subside during the diastolic period. With Martin's modification of the Riva-Rocci sphygmomanometer the high pressure of 170 mm. was registered. The pulse, which was 120–140 during examination, was regular. The heart sounds are clear. The spleen reaches 4 inches below the ribs; it is firm on palpation and not tender. The kidneys are large and moveable, the right more than the left. The urine contains a considerable amount of albumin, but no blood. The temperature is normal. The pupils are equal and active; there is no squint or nystagmus. The fundi are normal, except that the veins are large and tortuous." Bromide and citrate of potash were given as medicine and the left arm was kept elevated and bandaged.

The chorea became very severe, and after a few days, as no relief was obtained, phenazonum was tried. Under this drug the chorea rapidly subsided. The œdema of the left arm diminished slowly, the intense dark colour gradually disappeared, and the limb reassumed its former colour. The jugular vein and the superficial veins on the shoulder remained blocked. On Feb. 16th the patient was allowed to get up for a short time and continued to improve for a few days. On the 26th choreic movements in the left foot reappeared and the patient was again kept in bed. On the 28th she complained of pain in the region of the spleen, which was distinctly tender on pressure; there was a slight rise of temperature, but after two or three days the pain, tenderness, and fever disappeared. On March 2nd swelling of the left thigh was noticed, and pain was complained of in the hypogastric and left iliac regions. Examination per vaginam revealed nothing abnormal. On the following day the whole leg and foot were œdematous and almost black in colour, as the arm had been. There was also a good deal of pain in the thigh and calf. The leg was bandaged and kept elevated. On the 4th the right leg began to swell and on the following day became very dark and swollen like the left. This discolouration soon extended on to the abdomen up to a sharply defined line at the level of the umbilicus; whilst the face, arms, and upper half of the trunk were not nearly so cyanosed as usual. The abdominal superficial veins became also very much distended. Both legs now were kept elevated and bandaged. The vulva became œdematous and such obstruction to micturition was caused that it was feared a catheter might have to be used. This was not, however, necessary, although the vulva still remained much swollen, especially on the left side. Petechial extravasations along the course of the small veins appeared on the lower half of the abdomen, and the abdominal wall and back became rapidly œdematous. On the 10th the spleen, which had been noticed to be getting smaller since the legs had been thrombosed, only extended

below the ribs for about an inch. The amount of urine passed during the last days had been about 60 ounces per diem and contained much less albumin than I had ever previously noted. Small ulcers now appeared on the inner side of the lips and cheeks and on the tongue, and the chorea became worse again. On the 21st the ulcerative stomatitis, which had caused great discomfort, had disappeared under the exhibition of chlorate of potash, and the choreic movements had also again ceased. The legs had been very painful, necessitating lead and opium fomentations, and were still very œdematous, though not quite so dark in colour. Aching pain was now complained of in the right axilla, and on the following day the right arm and lower part of the right side of the neck were swollen and dark. The right side of the face became very cyanosed and puffy, and the spleen was noticed to be getting larger again. A slight cough was now first noticed, but no physical signs could be detected in the lungs. On March 25th the abdominal wall and back were very œdematous, but no free fluid could be detected in the abdominal cavity. The amount of urine passed per diem was now about 40 ounces only and contained no albumin. The patient seemed a little drowsy at times. The cough had become much more troublesome and respiration was quicker. The lungs were resonant all over; air entered well right down to the bases and there were no moist sounds. On the 27th the temperature was 100° F. and the pulse was 140; the usual rate for some time had been about 116; the tongue, however, was clean, and the appetite remained good.

On March 28th the patient was decidedly worse; the pulse was slightly intermittent, and the respirations were 36 per minute and shallow. Œdema of practically the whole of the body now existed but was greatest over the lower half of the abdomen and back. The legs, however, were still kept elevated. During the evening breathing became, somewhat suddenly, very rapid and laboured, and though it improved after a short time, in the early morning of the 29th it became again much worse. When I saw the patient at 4 A.M. the dyspnœa and restlessness were most distressing. I could still detect nothing in the lungs; air entered well all over and resonance was unimpaired. I yielded to her entreaties to be placed in an armchair, and after this had been carefully done the dyspnœa was considerably relieved. After some two hours in this position she went back to bed and had some sleep. On the following day she expressed herself as feeling much better. The respirations were still very quick, 42 per minute, but the patient was certainly much more comfortable. She remained in bed all day, well propped up with pillows, and took nourishment well, although some more ulcers were beginning to appear in the mouth. She was passing very little urine. She had a much better night, with several sleeps of over an hour's duration. The cough was, however, troublesome and the respirations were 50 per minute. On the morning of March 30th she seemed decidedly better and her husband left, more happy in his mind, for town. At 10.45 she was seized suddenly with the most intense dyspnœa, and when I saw her half an hour later she was unconscious and in a moribund condition. The breathing was gasping in character, the radial pulse was almost imperceptible, and the cyanosis of the face was intense. Strychnine and digitalin injections were given hypodermically and oxygen was freely used, but although a slight improvement in colour took place consciousness never returned and death occurred shortly after 2 P.M. in the afternoon. No post-mortem examination was performed. Unfortunately, a blood count had not been made for some time, as I had put it off from day to day owing to the serious condition of the patient.

The occurrence of thrombosis in a case of this disease seems to be a complication that one would almost expect, and yet, as I said, I have seen no mention of such general thrombosis in any of the cases published hitherto. Dr. Turney has, however, seen one case in which thrombosis occurred in the veins of the leg and was followed by a transient hemiplegia, the mode of onset of which, quite apart from thrombosis in the leg, made the diagnosis of cerebral thrombosis the most probable. The main veins in all four limbs and both sides of the neck became blocked and remained so, and though in the left arm a collateral circulation was established, with diminution of the cyanosis and œdema, in the other limbs no such amelioration of symptoms occurred. In the lower part of the body thrombosis commenced in branches of the external and internal iliac veins and ultimately the thrombosis, I think there is little doubt, spread to the inferior vena cava and the right side of the heart. The cough and dyspnœa at their onset might have been due to minute emboli in the smaller pulmonary arteries but more probably were due to thrombosis in the veins, and these symptoms were unaccompanied by any physical signs in the lungs that one could detect by the stethoscope or percussion. The fatal attack, too, was most probably due to thrombosis extending to the right side of the heart, blocking its valves and thus causing death—though there is the possibility of a large pulmonary embolism arising from a detached clot being the cause.

The association of the chorea with the thrombosis is extremely interesting. In cases of chorea associated with endocarditis, embolism of the smaller cerebral arteries, arising from vegetations carried from the mitral valve, has been one theory advanced as the cause of the disease. In this case there was absolutely no evidence of any endocarditis, affection of the mitral valve, or history of rheumatism, and therefore no condition likely to have given rise to cerebral embolism, but there is a strong probability that thrombosis first occurred in the smaller cerebral veins before appearing elsewhere and that the chorea was directly caused by this pathological condition.

The case seems to me to afford additional evidence in support of the theory that chorea is associated with embolism or thrombosis of some of the blood-vessels of the brain. On the other hand, the particularly clear mental condition right up to the end seems to negative any extensive cerebral thrombosis.

Sydenham, S.E.

ADENOIDS, NOCTURNAL INCONTINENCE, AND THE THYROID GLAND.

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IN the autumn of 1908 I was instrumental in obtaining a presentation to Christ's Hospital for a boy, aged nine years, and he was admitted on Sept. 16th. When he had been there for seven weeks his mother was informed that he had twice suffered from nocturnal incontinence, which was an old but infrequently recurring trouble with him, and that if this happened again he would have to be removed until he was cured. It did happen again. The boy was accordingly brought to town and I asked Dr. StClair Thomson to examine him with a view of ascertaining whether he was the subject of adenoids. Adenoids, according to the text-books, are one of the two commonest causes of nocturnal incontinence. The other, phimosis, could be excluded, the boy having been circumcised as a baby. Dr. StClair Thomson found that adenoid vegetations were present, but while agreeing to operate he warned me that he had frequently known nocturnal enuresis to persist after very thorough removal of adenoids and tonsils, even in cases where no other cause could be discovered.

The operation was performed on Dec. 12th and the patient made an excellent recovery. On the 15th he was allowed out of bed and seemed quite well. That night he wetted his bed and continued to do so on each of the next 15 nights—i.e., until Dec. 29th. In every other way he was perfectly well.

The removal of the adenoids and tonsils, so far from ameliorating his condition or holding out any hope of ultimate cure, had thus quite evidently aggravated it; for whereas formerly the incontinence occurred at intervals of weeks it had now become regular and persistent. The extent to which the bed was wetted was such as to suggest that the enuresis occurred more than once a night, and this in spite of every ordinary precaution, such as taking the child out of bed, being carefully observed.

The position was a serious one. The patient was the son of a widow who was entirely dependent upon her own exertions, and the condition of his return to Christ's Hospital was that he should remain free from nocturnal enuresis for three months. How was that freedom to be secured? Large and increasing doses of belladonna, the classical remedy of the text-books, naturally suggested themselves; but even if they

succeeded, their continuance, in the case of a boy at a large public school, presented serious and even insuperable difficulties. Was there no other course? A consideration of the events above related suggested to my mind the possibility that the removal of the adenoids had deprived the patient of some internal secretion which up to that time had partially protected him against these accidents; that, in fact, the adenoids, instead of representing a superfluity of naughtiness on the part of the organism, had, in reality, been developed for some useful purpose. In pursuance of this idea I decided to try the effect of thyroid extract. The thyroid gland has very intimate relations with the lymph glands, and adenoids consist of lymphoid tissue. Superficially there was not much encouragement to be obtained for this experiment from the boy's general condition. He was spare rather than stout, and so far from being lethargic he was very bright and intelligent. He was, however, undersized, being shorter by two inches than the average for his age. His pulse-rate was 74, his blood-pressure 100 millimetres of mercury. He began taking thyroid extract in Burroughs and Wellcome's tabloids of half a grain, one night and morning, on the night of Dec. 30th. The effect was most dramatic. The enuresis immediately ceased and, under the influence of the thyroid treatment, it has never since recurred. On Jan. 5th, 1909, that is, six days after the treatment was commenced, he had gained over five pounds in weight (from 4 stones 4 pounds 4 ounces to 4 stones 9 pounds 7 ounces), and on the 13th he reached 4 stones 11 pounds—the average for his age, at which he has remained. As the dose of half a grain (which I had tendered in the first instance not without misgiving) was so well borne on Feb. 14th I increased it to two and a half grains three times a day, thereby taking a step which, as will appear later, was so dangerous that it might very easily have turned success into disaster.

In view of so simple an issue from what threatened to be a calamitous *impasse*, I searched the literature to see whether any similar case had been reported. English authorities, both on the subject of enuresis and thyroid medication, I had already exhausted without finding a hint as to a possible connexion between the two. I now turned with some confidence to the recently published work of Léopold-Lévi and Henri de Rothschild,[1] some scattered papers by whom I had read in periodicals. Here I found the subject of enuresis mentioned on several occasions in connexion with patients who were the subject of thyroid insufficiency, but the mention in each case was merely incidental, and nothing was said as to the effect of the treatment on the enuresis. In the course of the book, however, I found several references to the work of a Belgian writer, Dr. Hertoghe of Antwerp, who had evidently made the thyroid gland an object of careful observation. I therefore consulted his writings, and amongst them there is a paper read before the Royal Academy of Medicine of Belgium entitled "Nouvelles Recherches sur les Insuffisances Thyroidiennes; l'Incontinence d'Urine Nocturne chez les Enfants et les Adolescents,"[2] in which the author insists strongly on the curative influence of thyroid extract in nocturnal enuresis and quotes some convincing cases. A perusal of this paper, overlaid though the subject is with much extraneous matter, encouraged me to try the effect of the treatment on children in the out-patient room of the Metropolitan Hospital, and I accordingly asked Mr. Sydney Vosper, now the senior house physician, to collect as many cases of the kind as he could. But for this gentleman's willing and even enthusiastic coöperation, of which I desire to express my warmest appreciation, it would have been impossible to have brought the investigation of the subject to its present point.

We have seen in all 25 cases. Of these only one has failed to respond to the thyroid treatment. The failure in this case (Case 12, quoted hereafter) was absolute and unequivocal. Of the remainder some were brilliantly successful, all were improved, and in no case has the thyroid extract produced any of those untoward effects of which we are taught to beware.

CASE 1.—The patient, a girl, aged 11 years, was first seen on Feb. 2nd, 1909. She had wetted her bed every night since birth. For the last few years she had in consequence slept on straw. She was dull and apathetic but not stupid. She was thirsty but her appetite was poor. The patient was not undersized and her weight was 5 stones 1 pound. The tonsils were somewhat enlarged, but there were no adenoids or nasal obstruction. The temperature was 99° F. in the mouth. One and a half grains of thyroid extract three times a day were ordered. Feb. 9th: The patient had missed wetting her bed for the last three nights—the first in her life. The same dose of thyroid extract was ordered. 16th: On three successive nights the bed had not been wetted. The dose of thyroid extract was increased to two and a half grains three times a day. 23rd: No enuresis had occurred during the week. Thyroid extract was ordered as before. March 2nd: No enuresis. 9th: No enuresis. 12th: No enuresis.

CASE 2.—The patient, a girl, aged nine years, first came to the hospital in May, 1908, complaining of cough, dyspepsia, and anæmia. Examination revealed nothing definite and a provisional diagnosis of pretuberculosis was made. Nothing was said about nocturnal enuresis and it was not inquired for. The patient improved under cod-liver oil and iron. On Feb. 5th, 1909, ten months later, she returned, and the fact of the enuresis was then elicited. The child, it appeared, had suffered without intermission from diurnal polyuria and precipitancy, as well as nocturnal incontinence, since birth. She was thin and anæmic but had no nasal obstruction. She was intelligent but tearful. The cod-liver oil and syrup of iodide of iron were repeated, and she was given in addition one and a half grains of thyroid extract four times daily. 12th: The patient had missed wetting her bed on six days out of the seven, the first in her life. She remained away from the hospital for 14 days, during the last seven of which she was without thyroid extract. During the first seven days she wetted the bed once, and during the second twice. The treatment was continued. March 5th: No enuresis. 12th: No enuresis. 16th: No enuresis.

CASE 3.—The patient, a boy, aged eight years, was first seen on Feb. 5th, 1909. He had wetted himself by day as well as night since birth, was very backward at school, and was undersized, being only 3 feet 4 inches instead of 3 feet 11 inches in height, while his weight was only 2 stones 11 pounds instead of 3 stones 13 pounds. He was a voracious and rather indiscriminate feeder. Two months previously he had been put on the table for adenoids, but it was found that he had a febrile temperature, so the operation was postponed. The temperature now was 97·2° F. He was given two and a half grains of thyroid extract four times daily. On the 12th the mother reported that during the week the patient had not had a single diurnal accident, and that he had only wetted his bed twice. He was brighter. 19th: The patient had wetted his bed once only during the week. March 5th: The bed had been wetted twice during the week. 9th: There had been no enuresis. 16th: No enuresis. 23rd: No enuresis. The temperature was now 98·4°. The patient no longer breathed through his mouth.

CASE 4.—The patient, a boy, aged three years, was first seen on Feb. 16th, 1909. He had been wetting his bed two or three times a week for three months. He had been subject also to nocturnal attacks of diarrhœa, not infrequently accompanied by vomiting. There were adenoids, a large abdomen, and beads on the ribs. The patient's weight was 2 stones 1 pound 8 ounces and his temperature was 96·4° F. He was given one and a half grains of thyroid extract three times a day. 23rd: The bed has been wetted once only during the week. The dose of thyroid extract was increased to two and a half grains. March 9th: There had been no enuresis for a fortnight and no attack of diarrhœa. 16th: There had been no enuresis; 5 pounds in weight had been gained, the abdomen was less prominent, and the patient was much brighter. He snored less at night and kept his mouth closed.

There are three other cases (Cases 5, 6, and 7), those of a girl aged eight years, a boy aged three years, and a girl aged ten years, which are in every way as satisfactory as those above quoted. There are four others (Cases 8, 9, 10, and 11) in which the patients, after showing decided improvement, disappeared, after the manner of out-patients, and have not so far been traced.

CASE 12.—This case, the subject of which was a girl aged seven years, is the only one which has up to the present shown no signs of improvement. The patient was brought to the hospital on Feb. 16th, 1909, with the story that she

[1] Études sur la Physio-Pathologie du Corps Thyroïde (Octave Doin, 1908).

[2] Bulletin de l'Académie Royale de Médecine de Belgique, IV. Série, Tome XXI., No. 4.

had wetted her bed, generally more than once a night, ever since her birth. The parents had had one other child who had died from a cause unelicited. The patient had always been delicate. She was not, however, undersized, and her weight of 3 stones 7 pounds was up to the average. The temperature was 98° F. She had enlarged tonsils but free nasal respiration. She was given two and a half grains of thyroid extract night and morning. On the 23rd the mother was of opinion that, although the enuresis had occurred every night, there was an improvement, inasmuch as it did not occur so often nor so soon after retiring. The thyroid extract was ordered to be taken four times daily instead of twice. On March 2nd there was no improvement. The mother thought the child worse in every way. On the 9th there was no improvement; she was therefore given iodine and arsenic in addition to the thyroid extract. On the 12th there was still no improvement. She had lost weight; her temperature was 99°.

The remaining 13 cases, some of which have been but a short time under treatment, all show very definite evidences of amelioration, though none can as yet be described as complete cures. The response in each case has, however, been so decided as to encourage the confident hope that a continuance of the thyroid treatment, reinforced if necessary by iodine, arsenic and calcium, all of which have direct relations with the functions of the thyroid gland, will ultimately be attended with perfectly satisfactory results. I append three typical cases, numbering them 13, 14, and 15.

CASE 13.—The patient, a boy, aged 13 years, had always suffered from nocturnal enuresis, for which he had in vain sought relief at various hospitals. He also complained of abdominal pain at night. He had a high arched palate and large tonsils. Examination confirmed the presence of adenoids, which his appearance suggested. One brother had a hare-lip. The patient was undersized, being 4 feet 6 inches instead of 4 feet 9 inches in height, and he weighed 4 stones 11 pounds instead of 5 stones 3 pounds. At school he was only in the third standard; he ought to have been in the sixth. He was given two and a half grains of thyroid extract night and morning. On Feb. 23rd he reported having been free from enuresis on four nights, and the nocturnal pains were less. The dose of thyroid extract was increased to five grains night and morning. On March 2nd it was ascertained that, though feeling much better, he had been free from enuresis on one night only. 9th: The patient had had four nights of freedom. 16th: Four nights of freedom. 23rd: No enuresis. The patient had gained weight, he snored much less at night, and his nasal respiration was improved. The abdominal pains no longer troubled him. He was given a tonic in addition to the thyroid extract.

CASE 14.—The patient, a girl, aged six years, was first seen on March 2nd, 1909. She had begun to wet her bed two months previously after an attack of mumps, but had not done so before. Since then she had suffered from constant nocturnal enuresis and frequent diurnal accidents. Digital examination revealed adenoids. The weight and temperature were normal. She was given two and a half grains of thyroid extract night and morning. On the 9th it was ascertained that during the past week she had wetted the bed on two occasions only and that there had been no diurnal accident. The appetite was much improved and the patient was brighter. The thyroid extract was ordered to be taken three times a day instead of twice. 16th: The bed had been wetted every night; a tonic was therefore given in addition to the thyroid extract. 23rd: There had been one night of freedom. The dose of thyroid extract was reduced.

CASE 15.—The patient, a boy, aged eight years, was admitted to the French Hospital on Feb. 22nd suffering from bronchitis. His mother stated that he had had noctural enuresis and diurnal accidents without any intermission since birth, and had been ineffectually treated in the Paris hospitals for this condition. He had no phimosis, no adenoids, and only moderately enlarged tonsils. He had always been apathetic and tearful. He was given one and a half grains of thyroid extract three times daily. In spite of the fact that he was taken up once and sometimes twice a night the nocturnal enuresis continued unabated for ten days, but the diurnal accidents ceased. On March 4th, in addition to the thyroid extract he was given iodine and arsenic, and on the 6th he began to improve. On the 8th the dose of thyroid extract was increased to two grains, and the nurse was told not to get him up at night. On the 11th, 12th, and 13th there was no enuresis, and during the following week it occurred on three occasions only. The child became much better. The temperature, however, remained low, from 96·2° to 97·2° F.

The deductions to be drawn from this inquiry are several, if not many, but as I am anxious to avoid overloading the present communication I will restrict myself to what seem to be the most important.

The first is that adenoid vegetations can no longer be regarded as a cause of nocturnal enuresis. Without at present going so far as to say that, as suggested by the case which forms the opening part of this paper, the adenoids afford some measure of protection from nocturnal accidents of this nature, I feel justified in asserting that when the two conditions are associated, which they often are, but as often are not, they are both due to a common cause—namely, insufficiency of the internal secretion of the thyroid gland. This insufficiency accounts for the vast majority of cases of nocturnal enuresis in children, as shown by the fact that the exhibition of thyroid extract will in a comparatively short space of time effect not only a cure of the enuresis but a great amelioration of many coexisting evidences of ill-health. It will be observed that in none of the above cases have belladonna and hyoscyamus, which constitute the somewhat slippery and brutalising sheet-anchors of the text-books, played any part in the treatment. Where it was thought desirable to employ anything in addition to the thyroid extract, these additions have consisted of tonics such as iron, arsenic, and iodine.

The very remarkable improvement in the general health of the patients under treatment for enuresis by thyroid extract induced me to try the effect of the drug on two or three children who suffered from debility due to other causes. The case of one of these affords a lesson which it is well to lay to heart, a lesson which, had it presented itself sooner, would, I believe, have saved me from some disappointments and possibly from my one complete failure. It was that of a boy, aged nine years, who had been under treatment on and off for two years for general debility consequent on an attack of nephritis from which, so far as physical signs were concerned, he recovered perfectly. He had a rickety thorax but no adenoids. He did not suffer from nocturnal incontinence and had a normal temperature and a normal palate, but the miracles wrought by thyroid extract in the other cases moved me to give it a trial in his case. He was therefore given two and a half grains three times daily in addition to the cod-liver oil which he was already taking. The result was not only surprising; in my then frame of mind, it was positively shocking. During the week of thyroid extract treatment he had, for the first time in his life, suffered from nocturnal enuresis. The obvious inference from this was that the thyroid secretion is a regulator of the mechanism by which urinary incontinence is controlled, an excess of the secretion being almost, if not quite, as deleterious as an insufficiency. Since this fact was brought home to me I have had fewer disappointments, for I now recognise that in the treatment of enuresis by thyroid extract the question of dosage is not only of paramount importance but also of the utmost delicacy. It is essential to success that the initial dose should be very small; that this dose should be increased very cautiously, if at all; and that the minimum dose which experience proves to be productive of good results should be steadily persevered with, reinforced, if necessary, by such tonics as have already been mentioned. The cause of failure in Case 12 I now believe to have been not so much a want of amenability to thyroid medication on the part of the patient as a want of skill on my part in regulating the dose, and if I am successful in tracing this patient I shall undertake her treatment on this hypothesis with very considerable confidence.

Harley-street, W.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—The summer term at the National Hospital in Queen-square will commence on May 4th with a lecture by Dr. J. S. Risien Russell on the Significance of Paralysis in Cranial Nerves. Clinical lectures and demonstrations will be held at 3.30 P.M. on the following Tuesdays and Fridays (with the exception of June 1st) until July 13th.

STREPTOCOCCAL PERICARDITIS AND COLITIS FOLLOWING TONSILLITIS.

BY J. SIDNEY PEARSON, M.A., M.D. CANTAB.,
LATE RESIDENT MEDICAL OFFICER, EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL.

THE two cases recorded below are, I think, of some interest on account of their similar and unusual symptoms and as warning of the possible dangers from an apparently slight attack of follicular tonsillitis. I do not think that the colitis was a mere incidental complication. In neither case did it give rise to any symptom until the hæmorrhage occurred.

CASE 1.—The patient, a well developed, healthy-looking girl, aged 20 years, was treated on April 26th, 1907, at St. Mary's Hospital, Plaistow, for follicular tonsillitis. On the 28th she had pain in her limbs but no trouble in any of her joints. The tonsillar condition was well by the 30th, but the pains had not yielded to salicylates. On May 3rd her temperature was found to be 105·6° F. and she was admitted into the hospital under the care of Mr. S. J. Wareham. The only points in the history were that her mother, who was in the country, "suffered with her heart." The patient had always had trouble with her bowels and had been treated two years previously for chlorosis.

On admission she did not appear to be very ill. The temperature was 105° F., but she was quite conscious and took a great interest in her own condition. Examination revealed pain on pinching the muscles, especially the thighs. There was no pain in the joints. There were a few small pustules on the buttocks. The heart sounds were well heard and there was no increase of cardiac dulness. She was put on a mixture containing sod. salicyl. gr. xv. every two hours, and shortly the temperature fell to 102°. On the evening of May 5th it rose again to 105°, but the patient seemed no worse. Typhoid fever was suspected, but there was no evidence, and Widal's reaction was negative throughout her illness. On May 6th the temperature was 106·8°, but there was no sign of delirium. Cardiac dulness had increased up to the second left space, and later in the day pericardial friction was detected for the first time. On the 8th the patient became drowsy and later delirious. On the 9th there was incontinence of loose fæces. On this day the urine, which had contained albumin throughout, was found to have a trace of blood in it and the next day was quite dark red. Pustules appeared on the outer aspects of the soles of the feet. There was no œdema or desquamation. On the 10th I heard from Dr. J. W. H. Eyre of Guy's Hospital that he had obtained a pure culture of streptococcus longus from the blood. Antitoxin was given on the following day, but her condition remained the same. On the evening of the 12th the patient suddenly passed about two pints of dark red blood per rectum and died shortly afterwards. The stools, which had been watery, had not shown a sign of blood previously. A post-mortem examination revealed intense inflammation of the pericardium, which contained about two ounces of thin pus. The layers were rough, shaggy, and thickened. There was no endocarditis, the valves being healthy and competent. The whole length of the large intestine was studded with shallow, irregular ulcers varying in size from a threepenny-bit to half a crown. One large and deeper one was seen in the descending colon.

CASE 2.—The patient, a girl, aged seven years, was admitted on July 23rd complaining of pain in the knees, which, however, were neither red nor swollen. Five days previously she had had an acute tonsillitis, of which there was still slight evidence. No history of rash was obtained. The cardiac sounds were normal. The apex beat was in the fifth space nipple line. The temperature was 102·6° F., the pulse was 144, and the respirations were 42. She was put on sod. salicyl. gr. xv. every four hours. The temperature fell in a few hours, but pains persisted. The temperature was as high as ever on the next day, and on the following rose to 105·4°. Pericardial friction was now heard, and there was increased cardiac dulness. On the evening of the 29th I discovered an unusual phenomenon The temperature in the right axilla was 102°, compared to 106·4° in the left, whilst the rectal temperature was 104°. I confirmed this by two thermometers, placing them in different positions, but always with the same result. The child became very apathetic, and later delirious. The streptococcus longus was grown from the blood and 10 cubic centimetres of anti-streptococcic serum were injected daily. On August 7th and 9th the child passed about two ounces of bright red blood per rectum and after this the stools were often blood-stained. Pustules appeared on the buttocks on the 12th. On the 14th the child began to improve. The heart sounds became more audible and the dulness less. She left the hospital on Sept. 14th for a convalescent home and returned a month later quite well. She was on various drugs, including five grains of sodium sulphocarbolate, which seemed to improve her, but I should not like to lay any stress on this.

These two cases were so much alike that I was prepared for the late developments in the second case. The hemipyrexia was discovered by a nurse, and since this case I have frequently observed that in acute pericardial effusions the temperature in the left axilla is often a degree higher than in the right; in fact, I look upon this sign when present as very suggestive of pericarditis and one which may be useful when the auscultatory signs are doubtful.

I am indebted to Dr. E. B. Randall and Mr. Wareham for permission to publish their cases.

New Cavendish-street, W.

A SIMPLE METHOD FOR THE STERILE COLLECTION OF BLOOD.

BY HUGH W. BAYLY, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT, BACTERIOLOGICAL DEPARTMENT, ST. GEORGE'S HOSPITAL.

WHEN collecting numerous samples of bloods by venipuncture the use of a syringe necessitates a considerable waste of time as the syringe cannot, after use, be plunged into boiling water without great danger of cracking, neither can it be safely removed from boiling water. If the temperature is gradually raised to boiling point and then lowered about ten minutes will be required for each case. If an all-metal syringe is used it is impossible to see whether the blood is flowing into the barrel properly. Also, if a metal plunger is used and pure uncitrated blood is required (as is the case when the blood is required for the serum diagnosis of syphilis), the thin film of blood between the plunger and the barrel is liable to clot, when the plunger becomes immoveably fixed in the barrel. This is obviated by lubricating the plunger with oil or vaseline, but as this must be done after sterilisation there is an added opportunity for contamination. If a rubber plunger is used it is not always smooth and satisfactory in working in a dry barrel.

I have, with Dr. Charles Slater's kind help, devised the following simple little apparatus which I find quite satisfactory, and which permits of the collection of 18 samples in an hour of whatever quantity may be required. Instead of a syringe I use a hollow metal needle holder two and three-quarter inches long, having a finger-grip half an inch from the nozzle end. The bulbous distal end is connected by about four inches of rubber tubing with a sterile test-tube, into which the blood flows directly (see Fig. 1). I use needles one inch long and with the calibre of a large exploring needle. J. H. Montague, of 69, New Bond-street London, W., has made me a small case containing 18 needles

FIG. 1.

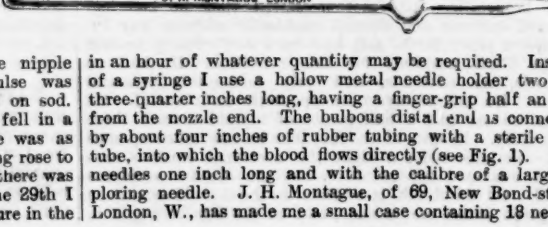


FIG. 2.

and two holders, and while I am using one holder, the other, with tubing attached, is being sterilised.

I use a fresh needle for each case, and the needle will slip into the vein with ease if lubricated with a little sterile vaseline, and for this purpose I use a five cubic centimetre serum flask, filled to the shoulder with vaseline, which is autoclaved at 120, and after the vaseline has solidified a few drops of izal are introduced into the neck of the flask, which is then covered with a sterilised rubber teat. The needle, immediately after removal from the steriliser, is dipped into the vaseline before use. After use the holder and tubing should be washed through with a small glass urethral syringe to remove the blood before placing in steriliser.

If the patient objects to venipuncture, which is seldom the case, I use the glass tube depicted in Fig. 2 with which I can easily collect one cubic centimetre from the finger. The tube is made from No. 4 glass-tubing with one end drawn out into a capillary tube and the other end sealed and a bulb blown near the drawn-out end with a small hole blown in its side (see Fig. 2). The tube is held with the hole in the bulb uppermost and the blood will flow into the bulb by capillary attraction and then collect in the sealed end, the displaced air escaping through the hole in the bulb. After filling, the drawn-out end is sealed in the flame and the hole in the bulb is sealed with wax.

Brook-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON SOME NON-TUBERCULOUS THROAT COMPLICATIONS OF PHTHISIS.

BY HAROLD S. BARWELL, M.B. LOND., F.R.C.S. ENG.,
SURGEON FOR DISEASES OF THE THROAT, ST. GEORGE'S HOSPITAL; SURGEON TO THE THROAT AND EAR DEPARTMENT, HAMPSTEAD GENERAL HOSPITAL; LATE LARYNGOLOGIST, MOUNT VERNON HOSPITAL FOR CONSUMPTION, ETC.

TUBERCULOUS laryngitis is by far the most important of those complications of phthisis which affect the upper respiratory tract, so much so, indeed, that it is apt to overshadow all the others and to receive the exclusive attention of the laryngologist as well as of the physician. Nevertheless, other complications are very frequently encountered and are of sufficient importance to claim some consideration. A "pre-tuberculous" condition of the larynx has often been described, and this expression seems to mean an abn... condition, consisting of anæmia, congestion, or swe...ng of the larynx of a phthisical patient but without as yet any true tuberculous deposit, and it is implied that this is a precursor of tuberculous infiltration. The use of this expression appears highly unscientific, for there are no grounds for the view that there is any distinctive state of the larynx which is always, or frequently, followed by tuberculosis. There is also a very general opinion that pallor of the larynx is a characteristic feature of tuberculous laryngitis, but this opinion requires qualification. Many consumptives are anæmic, and in such cases the larynx, as well as the fauces and other mucous membranes, are, of course, pale; in other cases the colour is quite normal, and very frequently the tuberculous larynx is in a state of hyperæmia as the result of coughing and irritation; in fact, it may be stated that tuberculous laryngeal are reddened quite as frequently as unduly pale. It is true that the swollen infiltrated arytenoids are often pallid, and that the margins of tuberculous ulcers are characteristically anæmic, and this may have given rise to some misconception; but very often tuberculous infiltration is decidedly red and congested, especially on the cords, ventricular bands, and epiglottis.

Simple chronic pharyngitis and laryngitis are extremely common among consumptive patients and not infrequently give rise to mistakes in diagnosis, for there is naturally a tendency to diagnose tuberculous laryngitis in a phthisical patient who complains of hoarseness and discomfort in the throat. The frequency of simple inflammation of the larynx may be explained by the strain of constant coughing and by the contact with irritating sputum which contains numerous micro-organisms and their products in addition to the tubercle bacillus. In the absence of other distinctive signs a uniform redness of both vocal cords should not be diagnosed as tuberculous, but if one cord be affected markedly in excess of the other tuberculosis may be strongly suspected. The subjects of active phthisis often complain of much dryness and discomfort in the throat, especially at night, even when there is no obvious nasal obstruction. This appears to be the result of the nocturnal pyrexia and the consequent rapid respiration which makes nasal breathing insufficient. A drink of hot milk or a demulcent lozenge diminishes the sense of discomfort. Patients in quite an early stage of phthisis sometimes complain of painful sensations about the throat which on examination appears perfectly normal. The cause of this is obscure; it may, perhaps, be that the pain is referred from the pulmonary disease to the most sensitive part of the respiratory system. Be that as it may, the symptom is not very uncommon, and I would suggest that the patient who complains of pain about the larynx for which no cause can be found should be submitted to a careful examination of the chest.

Pachydermia laryngis is also disproportionately common among the subjects of pulmonary phthisis; indeed, Gougenheim[1] considered the majority of cases of pachydermia to be tuberculous. I personally consider the affection as an extreme form of chronic laryngitis and due to the same causes; it is therefore natural that it should be frequent in the larynges of consumptives exposed to the mechanical irritation of coughing and the chemical irritation of the sputum without, of necessity, any entrance of the bacillus tuberculosis into the tissues. The firm white, almost cornified, appearance of a typical case is very different from the soft semi-translucent granulations of tuberculous laryngitis. On several occasions I have removed the pachydermatous thickening from the posterior commissure of consumptive patients and have failed to find any sign of tuberculosis on microscopical examination.

It is well known that in cases of tuberculous laryngitis the voice is readily lost and is generally much weaker than it would be with a similar extent of lesion due to another cause, such as syphilis. But apart from any laryngeal affection, functional aphonia is very common among consumptive patients. The feeble respiration, the general weakness, and the tendency to catarrh and discomfort of the throat all conduce to this affection, which is found in male as well as female consumptives, though more frequently in the latter. It is so frequent that an examination of the chest is advisable in every case of intractable functional aphonia. True paralysis of a vocal cord is also a recognised complication of pulmonary phthisis. It is due to pressure on the recurrent laryngeal nerve, and is therefore of the abductor type. Paralysis of the left cord is the result of pressure on the left recurrent laryngeal nerve by enlarged bronchial or tracheal glands, but the right nerve passes very close to the apex of the right pleura and is thus sometimes directly involved in an infiltration of the lung on this side. This is, perhaps, the commonest cause of paralysis of the right vocal cord, therefore the possibility of pulmonary phthisis should always occur to the mind of the observer who discovers this lesion on laryngoscopic examination.

Thus, other complications of pulmonary phthisis occur in the throat besides tuberculous laryngitis, and deserve recognition; and in a few cases where the first complaint is of the throat a correct estimate of their significance may direc the attention to the pulmonary disease.

Wimpole-street, W.

NOTE ON A CASE OF JACKSONIAN EPILEPSY, TREATED BY TREPHINING.

BY W. BERNARD SECRETAN, M.B. LOND., F.R.C.S. ENG.

THE following are notes of a somewhat unusual case of Jacksonian epilepsy, in which cessation of the fits was brought about by operation.

The patient was an anæmic woman, aged 24 years. Her occupation was that of a clerk. About 16 years ago she fell down a flight of steps on to her head. She was not stunned at the time and was apparently able to get up by herself and

[1] Atlas de Laryngologie et de Rhinologie, p. 16.

go home. Eight days after, however, she developed a very severe headache, which was followed the same night by three convulsions affecting the left arm and leg. Each convulsion lasted only a short time. The next day the left arm and leg were found to be paralysed. The arm recovered after about five months; the leg remained more or less useless for a year, and weak for much longer, necessitating the wearing of supporting irons. The growth of the leg was also impaired, so that it is now considerably shorter than the right. Since the paresis passed away the patient up to the date of the present illness had always enjoyed good health with the exception of "a nervous breakdown" in the spring of last year. This, however, only seems to have lasted a week.

The present illness followed a spell of extra work at bookkeeping, owing to the absence of one of her fellow clerks. She came home one week end complaining of intense headache; this continued and on the following Monday she was seen by her own medical man, Dr. C. G. S. Leeds. He found her in a dazed, dreamy condition, every now and then crying out with the pain, which was not localised to any one spot but affected her whole head. She was given bromide, phenazone, and later aspirin, and appeared to improve somewhat, so that on the following Thursday the pain was decidedly better. On the Friday night, however, she had 11 convulsive attacks. The convulsions were limited to the left arm and leg, affecting the former more than the latter. They lasted from two to five minutes and apparently there was no complete loss of consciousness. On the Saturday morning there was a temporary cessation of fits, but they recommenced in the afternoon so that by the following day (Sunday) the patient had had another 20. By this time the convulsive movements were more violent and in some of the worst attacks there was complete loss of consciousness. Clonic movements of the muscles of the face and of the eyeballs also occurred. The patient was able to tell when a fit was about to occur and would cry out to this effect about a minute before the actual onset.

I saw her with Dr. Leeds, and as she was obviously going downhill and becoming more and more exhausted we decided to trephine the next morning. By that time (Monday) she had had another 29 attacks, and so frequent were they becoming that no less than four occurred whilst we were in the house making our preparations. I turned down the usual scalp flap and removed an inch and a quarter disc of bone over the right fissure of Rolando, having its centre about one and a half inches from the upper end of the fissure. I could find no depression or thickening of the bone, nor was the dura adherent to the skull. The brain bulged a good deal into the opening. The dura was incised for about three-quarters of an inch, without, however, throwing any further light on the case, and finally the scalp was sutured in position over the hole in the skull. The night following the operation the patient had altogether six fits, but these were not nearly so severe as her former ones. The next day she had none. That night again she had three very slight attacks. Since then up to the present time (six months) she has had none. The headache ceased the day following operation. The woman to-day is fit and fell. She has only been allowed to do easy work, but is very anxious to do more. She says that her head is much clearer than formerly and that she is much quicker at figures and less easily fatigued by them than before her attack.

The case is remarkable on account of the long period of time which elapsed between the initial injury and previous attack and the present one. Also on account of the benefit resulting from trephining, although nothing abnormal was found at the time of operation. I am not, of course, at the end of only six months so bold as to call the patient cured. Time alone will show that. I see no reason though why the fits should recur provided the woman can be induced to lead a placid, quiet life. Anyhow, the operation undoubtedly saved her life at the time.

Reading.

IRISH MEDICAL SCHOOLS AND GRADUATES' ASSOCIATION.—A special meeting of this association will be held at Harrogate on Saturday, May 22nd. Arrangements have been made with the Majestic Hotel to allow of members remaining until Monday to visit places of interest in the neighbourhood. Full particulars may be obtained from the honorary secretary, 30, Myddelton-square, London, E.C.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Arterial Blood-pressure Readings.

A MEETING of this section was held on April 27th, Dr. T. H. GREEN being in the chair.

Dr. O. K. WILLIAMSON said that observations by the method of circular compression were made on the leg and arm of the same patient in 21 cases of high arterial blood pressure. In all of the cases in which the arteries of the leg and foot could be felt these were found to be abnormally resistant and more so than those of the upper extremity; and in nearly all the cases there was also marked thickening in the arteries of the upper extremity. Ten cases of normal or low blood pressure, in which the arteries presented no clinical evidences of disease, were investigated in the same manner, so as to afford a basis of comparison. The observations were made on the calf and arm, the patient observed being recumbent, and the part of the limb on which the observation was made was at the level of the heart. Oliver's compressed air hæmomanometer was used with his 12 centimetre armlet. These observations showed that the resistance due to the arterial wall might markedly influence the readings, for the following reasons: 1. In the high blood-pressure cases the leg systolic readings were in nearly all cases markedly higher than the corresponding arm readings (average difference 32 millimetres), and the cases of highest blood pressure yielded distinctly greater differences than the cases of somewhat lower blood pressure. On the other hand, the leg diastolic readings in these cases were, on the average, practically identical with the arm diastolic readings (average difference less than 2 mm. Hg). 2. In the case of normal or low blood pressure the systolic arm and leg readings were found, on the average, to be identical (average difference less than 2 mm. Hg). 3. Inasmuch as the blood pressure in the leg could not be higher than that in the arm (either limb being at the level of the heart), and seeing that the influence of the tissues superficial to the artery might (when a sufficiently wide armlet was used) be neglected, it necessarily followed that the difference between the arm and leg readings could only be due to resistance of the arterial wall. 4. The conclusion that the abnormal condition of the arterial wall was a direct result of the increased blood pressure would seem to be inevitable, for the only obvious difference between the conditions to which the arteries of the legs and those to which the arteries of the arms are exposed in daily life was that, owing to the action of gravity, the former were subjected to greater hydrostatic pressure from a higher column of blood than were the latter.

Dr. GREEN said that it was very important to determine how far the pressure readings were influenced by the condition of the vessel wall, and on that point there seemed to be no definite agreement amongst various workers on the subject. A great deal had been done in the matter during the last few years, but much remained to be done. While waiting for that further information physicians had to be largely guided by their own unaided senses. When the blood pressure was largely increased and when the arteries were markedly thickened those facts were evident to the trained finger. There seemed to be danger at the present time of relying too much on instrumental aids. Even with the best instruments if there was not clinical skill physicians might fall far short of what they ought to achieve.

Dr. W. P. HERRINGHAM said that he had been making experiments on arteries that had been removed from the body 24 hours, and on arteries that had been three days out of the post-mortem room, being kept during those three days in a 1 per cent. solution of sodium chloride. He found that those arteries still gave in some cases high resistance readings just as other arteries did. The figures he obtained were 8, 13, 5, 4, 6, 12, 15, and 22 millimetres, showing that there was something in the artery itself quite apart from contractility. He had also been experimenting on simultaneous readings from the arm and leg, testing two places at the same moment, and his results confirmed those of Dr. Williamson.

Dr. T. D. SAVILL asked whether the author of the paper

had compared the condition of the arteries in the lower limb with those in the upper limb in the cases quoted. In his (Dr. Savill's) prolonged investigation into the condition of the arteries in many old people at workhouse infirmaries he found that in most cases the leg showed a more advanced stage of degeneration than the arm. He had convinced himself that there was an initial stage of arterial hypermyotrophy or increase in the middle coat of the artery, prior to degeneration. He believed that the vital condition of the artery was of very great importance, and pointed out that the arteries after death were of different size to what they were during life.

Dr. LEONARD E. HILL said that he had not found evidence of the differences in pressure recorded by Dr. Williamson and substantiated by Dr. Herringham. He (Dr. Hill) laid stress on the importance of taking the readings in the two limbs simultaneously.

Dr. C. O. HAWTHORNE said that before they could accept the figures put before them they must be confirmed by other observers. He questioned whether that discussion on blood pressure was of great clinical importance. In addition to noting the element in the blood pressure due to the systole of the left ventricle they must appreciate the condition of the peripheral arterioles.

Dr. WILLIAMSON replied.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on April 26th, Mr. C. B. LOCKWOOD, the President, being in the chair.

Dr. F. J. POYNTON and Dr. W. L. SCOTT showed three cases of Recurrent Familial Jaundice in a female, aged 22 years, in her sister, aged five years and eight months, and in a brother aged eight years and five months. The predominance of anæmia was striking in all three cases. Jaundice, though at times most definite, and in the eldest of the patients very striking, occurred only in definite attacks and could not be said to have been at all persistent. By daylight, however, the eldest had always an icteric tinge. In accord with the usual history of this type, the spleen was enlarged more in proportion than the liver; the varying size of the liver had been noteworthy. Dr. Scott observed that he had seen in each case an attack of deep jaundice with clay-coloured stools.

Mr. V. WARREN LOW showed a case of Congenital Dislocation of the Hip-joint treated by manipulation in 1905. The patient, a girl, who was now aged ten years, went to St. Mary's Hospital in 1905 with a congenital dislocation of the left hip-joint. Mr. Low saw her first in September, 1905, at the age of six and a half. The child then had the typical gait of a patient with a unilateral congenital dislocation of the hip-joint. There was 1½ inches shortening of the left limb. The upper end of the femur could be felt on the dorsum ilii and could be brought down to the level of the acetabulum. The limb could be freely moved in every direction except that of abduction. The mother said that the child could not walk more than half a mile without complaining of her leg and back, and that her peculiar gait always excited comment in the streets. The operation by manipulation (Lorenz) was performed in September, 1905. The child left the hospital a month later in plaster; this plaster was retained for six months. She was then readmitted to hospital, her leg was straightened under an anæsthetic, and a second plaster applied. This she wore for six months. Some stiffness and lameness remained for six or eight months after the second plaster was removed. There was now no shortening; the child walked without a limp and was able to run, skip, and walk considerable distances without fatigue.—Mr. T. H. KELLOCK emphasised the importance of recognising that the so-called "bloodless" reduction of Lorenz was a severe operation. He congratulated Mr. Low on the success he had achieved in the case before them.

Mr. KELLOCK showed a case of Traumatic Meningo-encephalocele cured after lumbar puncture and slight pressure. The patient was a child, aged three years. When nine months old she was admitted to the Hospital for Sick Children, Great Ormond-street, for a swelling on the head. The mother stated that the child was quite normal at birth and that there was nothing wrong with her until 14 days before admission, when during the mother's absence from the room the child fell on the floor, where she was found unconscious, convulsed, and of a blue colour. A swelling was immediately noticed on the side of the head, which the mother stated increased in size whilst she was watching it. On admission the child appeared to be quite healthy. A soft pulsating tumour of the size of half a Tangerine orange was situated over the centre of the left parietal bone; it was partly reducible on pressure and was felt to project through an uneven opening in the bone. The head was noticed to be rather flatter than normal behind, and the child had what was described as a "harsh cerebral cry." A day or two later the lumbar puncture was done and one and a half ounces of slightly turbid fluid were withdrawn. The tumour immediately disappeared and the opening in the bone could then be distinctly felt, with radiating fissures extending from it. Two days later the tumour had slightly re-formed, a pad with an elastic band was applied which controlled it, and this was worn for some little time after the child's discharge from the hospital. She had not ailed in any way since. There was no tumour to be felt, but the opening in the parietal bone still existed.

Dr. F. PARKES WEBER showed a case of Symmetrical Atrophy of the Hand Muscles with Cervical Ribs and a family history of cervical ribs. The patient was a girl, aged 13 years, showing nothing abnormal excepting in regard to the upper extremities. There was decided wasting of the thenar, hypothenar, and inter-metacarpal regions—that is to say, involving the intrinsic muscles—in the right hand, and to a lesser degree in the left hand. Faradic irritability was much reduced or altogether absent in the affected muscles of the right hand. The right hand was weaker and usually felt colder then the left hand; the dynamometer grasp in the right hand was 5 and in the left hand 15. There was no absolute anæsthesia, but there was decided hypo-æsthesia, especially to temperature, on the ulnar side of the right upper extremity, notably in the hand. The hypo-æsthesia to temperature involved the whole of the right hand, not merely the ulnar side; brachial blood pressure (Riva-Rocci method, with broad armlet) in the right arm was 90 mm. Hg.; in the left arm, 105 mm. Hg. The patient complained of occasional pain in the front of the right arm and forearm and sometimes in the hand. A skiagram by Dr. N. S. Finzi showed a small seventh cervical rib (or enlarged transverse process) on each side, but the one on the right side was the bigger of the two, and its extremity appeared almost to touch the first dorsal rib. Palpation above did not reveal their presence. The history was that during the last two years the patient had occasionally suffered from pains of a sharp, shooting character in the right upper extremity, generally in the front part of the arm and forearm. The wasting in the hands was first observed two or three months ago. No similar muscular wasting had been observed in other members of the patient's family, but skiagrams (likewise taken by Dr. Finzi) showed the presence of similar seventh cervical ribs (or enlarged transverse processes) in her brother and sister. These were both younger (aged eight and 12 years respectively) than the patient, and the abnormal bony projections seen in the skiagram appeared to be less calcified and somewhat smaller; if they increased in size, as they might do about the time of puberty, atrophy in the hand muscles might then occur, although there was none at present. The father, aged 34 years, has been found, by skiagraphic examination, to be free from cervical ribs (or enlarged transverse processes), but no examination could be made in the case of the mother. They had only three children and all three of them, as already stated, had cervical ribs or enlarged transverse processes. The family history confirmed the observations of Theodore Thompson and others on the presence of seventh cervical ribs as a family peculiarity. The connexion of symmetrical atrophy of the intrinsic muscles of the hands with the presence of seventh cervical ribs had been explained by the writings of Thorburn, Lewis Jones, W. W. Keen, Hinds Howell, and Theodore Thompson. It appeared not to be so much the length as the shape, and especially the curvature, of the supernumerary rib on which the interference with the first dorsal nerve root (which in these cases gives rise to the atrophy of the hand muscle) depended. If, as Thorburn supposed, the cervical rib produced its effect by lifting up

and stretching the brachial plexus, it could be understood that the grey matter of the spinal cord might sometimes be likewise affected so as to produce a partial dissociation of sensation resembling that which occurred in cases of syringomyelia. This might explain the supposed association of syringomyelia with the presence of seventh cervical ribs in some cases which had been reported. Muscular atrophy in the hands when due to the presence of cervical ribs occurred in girls or young women and was more frequently observed, or was more obvious, on the right side than on the left.—Mr. LOW asked what was the percentage of cases with cervical ribs in which nerve symptoms occurred, and Dr. LEONARD G. GUTHRIE pointed out that the ulnar side of the left hand of the patient showed a different temperature from that on the radial side, and said that that condition might be produced by some involvement of the first dorsal and the last cervical nerves.—Dr. WEBER, in replying, did not consider that a sufficient number of cases had been collected to determine the percentage for which Mr. Low had asked.

Dr. GUTHRIE showed a case of Progressive Muscular Atrophy in a man in which the onset had been gradual, lasting for seven months.

Dr. G. WILLIAM HILL demonstrated direct vision laryngoscopy on a female from whom a growth on one vocal cord had been recently removed by endoscopic surgery; tracheoscopy on a female with laryngitis and tracheitis; tracheobronchoscopy on a female with laryngitis, tracheitis, and asthmatic symptoms; and œsophagoscopy on a female with functional dysphagia.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

A meeting of this society was held on April 21st, Dr. P. Boobbyer, the President, being in the chair.—Dr. A. C. Reid read a paper on the Value of Ehrlich's Diazo Reaction to the General Practitioner. In this he pointed out the diagnostic value of the test in early cases of enteric fever. The disease must, however, have reached a certain stage before the reaction was present. When this stage had been arrived at the reaction was in his experience constant. It was also constantly present in miliary tuberculosis, but the differential diagnosis of typhoid fever was not so difficult from that disease as from febricula, gastric fever, abdominal influenza, and low broncho-pneumonia. The reaction did not merit the neglect it received from the general practitioner. As a negative test it occupied a foremost place, and as a positive reaction, when taken in conjunction with other signs, tests, and symptoms, it had considerable importance.—The President, Dr. F. H. Jacob, and Mr. O. Kentish Wright confirmed the value attached to this test by Dr. Reid.—Dr. A. J. Sharp, in opening a discussion on the Notification of Births Act, 1907, traced the changes brought about by the Act in the matter of still-births and exemption of the mother, and discussed the question as to how far a new duty had been laid upon the medical practitioner. Explaining the object of early notification as the first step in a movement for the reduction of infant mortality, he reviewed the various measures which had already been put into operation. Amongst these were baby-shows, bounties payable on the child attaining a certain age, systematic visitation by voluntary or paid workers, mothers and babies' "welcomes," the encouragement of maternal suckling, day nurseries, milk depôts, school instruction in hygiene, and general sanitary progress. Tracing various objections to the Act, that on the score of professional secrecy was the most serious and persistent, but this had no basis of support in law when a duty became public and statutory. Indeed, as regarded children not born in wedlock, they were above all others the ones who most needed the strong arm of the law to protect them. Their death-rate was at least double that of legitimate children.—Dr. S. E. Gill, continuing the discussion, emphasised the point that at the Nottingham Welcome no medical treatment of mothers or infants was attempted, but everything else that could be done in the way of encouraging the poor and inexperienced mother to feed, to clothe, and to tend her babe in a rational and hygienic way was done. In this way the more intelligent mother would act as a focus of knowledge and an example in her neighbourhood by which the general standard of infant hygiene and parental responsibility might be gradually raised. Indeed, the more aristocratic mothers might indirectly become more disposed to fulfil their natural obligations to their infants, which at present were apt to be shelved in favour of the theatre or playing bridge.—The President pointed out that the Nottingham Welcome, although it had only been in existence about eight months, had already secured an average attendance of 200 babies per month.—Mr. C. L. Rothera (Nottingham city coroner) agreed that the subject of infant mortality was one very vital to the health of the nation, and pointed out that the Children Act, 1908, laid down medical aid as a necessity which parents were compelled to provide for their children. He also drew attention to the elaborate system prevailing at Leipsic and elsewhere in Germany, by which children were examined weekly at a central depôt, so that any defect in the matter of health could be promptly detected and dealt with.—The discussion was continued by Dr. J. Watson, Dr. J. A. Waring, and Dr. W. Hunter.—Dr. W. Tibbles showed a Siamese, aged 19 years, the subject of Chronic Œdema of One Hand and Forearm of one and a half years' duration. The case had been carefully examined by Mr. James Cantlie, who had considered the possibilities of its being due to local irritation, synovial inflammation, filaria, ankylostomiasis, and angio-neuroses such as urticaria exaggerata, &c. A guess had been hazarded that it might be rheumatic, but there was no reason to attribute it to tubercle or specific disease. Blood examination had shown eosinophile corpuscles to be excessive, which rather suggested an intestinal infection. Indicanuria also existed, raising a suspicion of disturbed proteid metabolism. Treatment by bandaging the hand in thick wool, sour milk internally, and a mixture of oleum ricini cum oleo eucalypti had brought about some improvement, but a careful search in the stools had failed to reveal any parasite.—Dr. R. B. Purves (Lincoln) showed a Myomatous Uterus with the Deflected Cavity resulting, and Dr. Jacob showed microscopic specimens of Diplococcus Intracellularis from a case of epidemic cerebro-spinal meningitis.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

A meeting of this society was held on April 20th, Dr. T. Jason Wood being in the chair.—Mr. W. H. Horrocks showed: (1) Concretion from an Appendix which had burst through into the bladder and become coated with phosphatic deposit; and (2) Uterine Fibroid.—Mr. F. W. Goyder showed: (1) Sequestra removed from a case of Lumbar Abscess; (2) a case of Serous Meningitis treated by drainage through the posterior fossa of the skull; and (3) a Brain with Multiple Tumours, ? Nature.—Dr. Wood showed: (1) Carcinoma of the Breast with Enormous Mass of Glands in the Axilla; and (2) Uterine Fibroid.—Mr. J. Phillips and Dr. R. Honeyburne opened a discussion on Appendicitis. Mr. Phillips thought it best for the purposes of discussion to be somewhat dogmatic. He divided appendicitis into three types, the first of which he called the "simple type." In these cases, which were the mild ones, there were abdominal pain, tenderness in the right iliac fossa, a certain amount of fever, and quickening of the pulse. The treatment consisted in (1) absolute rest in bed; (2) no food of any sort, nothing but water being allowed; (3) clearing out the lower bowel by an enema; and (4) if necessary a simple carminative mixture. As a rule these cases got well or they might pass on to the second type, the cases with a swelling in the right iliac fossa. These cases could safely be left till things quietened down. Operation was not advisable at first as owing to adhesions and inflammation it was usually a very difficult procedure. When operation was performed the appendix should always be sought for and removed. The third type (the gangrenous cases) were the cases in which the catastrophes occurred. Diagnosis was very difficult. It rested chiefly on facial expression and the rigidity of that segment of the rectus muscle underneath which the appendix lay. Immediate operation was the only treatment. The best incision was one just above Poupart's ligament. The pus should be mopped out and a gauze drain inserted. On no account should the peritoneal cavity be washed out.—Dr. Honeyburne said he was glad to hear that Mr. Phillips, although a surgeon, was yet so conservative in his ideas. He differed from him, however, in his method of treatment. The main question in any case was: How much was the peritoneum involved? And the main point in the treatment was to keep the inflammation of the simple adhesive variety. This was to be done by

absolute rest for the inflamed part and not only should no food of any sort be given but the bowel must not be disturbed by enemata or any other method of evacuation. When diagnosed morphine should be given in full doses and the patient kept under morphine until there was no more pain or tenderness. Operation was never required except in the gangrenous cases when he quite agreed with Mr. Phillips that *immediate* operation was the only chance. Operation should be performed in the quiescent period by all means but not during the attack. His own cases (250 in all) gave a mortality of 2 per cent.—Mr. Horrocks thought that in the early cases the application of leeches was distinctly useful. He believed in calomel for the bowels. Given in one-quarter to half a grain doses every two hours and followed by an enema, he had seen excellent results from it. Tympanites was relieved and the patient rendered much more comfortable. In the second type where the swelling was to the inner side of the iliac fossa, careful watching was required, as the abscess was very liable to track down into the pelvis. He quite agreed with Mr. Phillips's incision in the gangrenous cases. In those cases where appendicitis was closely connected with colitis the results were not good.—Dr. Rabagliati said that in his experience if left alone the abscess frequently burst into the bowel and nature completed the cure. He wished there were some means of diagnosing the gangrenous cases early so as to avert the terrible calamities which they caused.—Dr. Wood said he did not think the cases with a swelling were always safe to leave and quoted instances from his own practice to back his opinion. In these cases he thought the incision should be over the most prominent part of the swelling. In women the diagnosis was sometimes very difficult—e.g., acute salpingitis. He thought the most logical thing was to operate in all cases as soon as diagnosed. In this way no harm was done to the cases classed as safe to leave, and the gangrenous cases would be taken early and given the best chance of life.—Dr. H. J. Campbell thought it was logical to operate as soon as diagnosed but not practicable. He therefore advised treatment on the same lines as Dr. Honeyburne, but would give the morphine per rectum.—Mr. Phillips replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Manchester on April 23rd, Dr. J. W. Martin (Sheffield), the President, being in the chair.—A vote of condolence to the family of the late Mr. Simeon Snell, proposed by Dr. D. Lloyd Roberts and seconded by Mr. R. Favell, was passed.—Dr. H. Briggs (Liverpool) showed two specimens of Hæmatometra removed by the Abdominal Route. In each case the retention of menstrual fluid was due to congenital atresia of the cervix. The patients were unmarried women, aged 32 and 35 years respectively. Microscopical examination of the uterine wall showed a great excess of fibrous tissue and an absence of glands in the endometrium.—Dr. A. Donald (Manchester) read notes of a case of Bilateral Abscess of the Uterine Appendages occurring during Pregnancy. Three weeks after spontaneous premature labour each abscess was drained extraperitoneally through an anterior colpotomy incision. A marked improvement in the patient's condition immediately followed, but two weeks later symptoms of acute peritonitis appeared. On opening the abdomen a ruptured pyosalpinx was found and removed. Since then the patient had made a steady recovery.—Dr. J. H. Willett (Liverpool) showed the specimen from a case of Cæsarean Section and Abdominal Hysterectomy for Carcinoma of the Cervix, complicating a seven and a half months pregnancy. The patient was a multipara, aged 34 years. Irregular hæmorrhage commenced at the end of the first month; later the discharge became offensive. The vagina was divided between clamps, but no attempt was made to excise the pelvic connective tissue. No enlarged glands were found. The mother made a good recovery, but the infant died when four weeks old.—Dr. W. Blair Bell (Liverpool) read the notes of a case of Acute Puerperal Sepsis with Thrombosis of the Ovarian Veins, which were ligatured and excised without success. Death occurred 16 hours after operation. He gave the details of a very complete bacteriological study of the case. Dr. Bell was of opinion that when septic thrombosis of the ovarian veins was diagnosed, immediate ligation and excision of the ovarian veins should be practised.—The President, Dr. Briggs, Dr. Donald, and Dr. A. W. W. Lea (Manchester) argued that operation in such cases was useless.—Dr. Donald read a note on the Use of Gauze Drainage in Certain Cases of Puerperal Sapræmia, in which retention of lochia occurs from sharp anteflexion of the uterus with sagging of the body. Toxæmic symptoms, due to decomposition, generally arose on the eighth or ninth day or soon after. Immediate improvement followed intra-uterine douching, but renewal of the retention and of the symptoms was likely to occur. This was best avoided by the use of a gauze drain.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on April 22nd, Mr. T. H. Bickerton, the President, being in the chair.—Mr. A. A. Bradburne read a note on Amblyopia Exanopsia. He dealt with that type found in conjunction with high degrees of refractive error. He considered the cause to be a cerebral defect, and based his treatment on that theory. He quoted one of his cases, a boy, aged 11 years, who had in six months' special training recovered vision from $\frac{1}{10}$ to $\frac{5}{5}$ or Jaeger 1. He considered that want of success in treatment was due to the defect being a complex one, the visual act depending on several centres.—Mr. A. Nimmo Walker advocated the whole-time covering of the non-squinting eye until the vision of the squinting eye became equal to that of the other. This was possible in the majority of cases if taken early enough.—Mr. R. C. Dun read a note on Intussusception based on an analysis of 73 cases. He argued in favour of irrigation followed, if necessary, by immediate section. Ether was always the anæsthetic used.—Dr. Hubert Armstrong discussed the paper.—Dr. F. Wilson read a paper on the Serum Diagnosis of Syphilis. Wassermann's and Noguchi's tests were described and their value was contrasted. Using Wassermann's test, 23 results were positive out of 30 cases. Of 20 controls 3 were positive, but in none of these could the possibility of syphilis be excluded. With Noguchi's test 40 out of 52 cases were positive; also 3 out of 25 controls. Out of 30 cases submitted to both tests 22 were positive with both; 4 were negative with both. Two were positive with Wassermann's test and negative with Noguchi's test. Two were negative with Wassermann's test and positive with Noguchi's test. The opinion expressed was that Wassermann's test, although the more complicated of the two, was the more trustworthy.—Dr. Ernest E. Glynn referred to the fact that some cases of cancer growth gave the Wassermann reaction and that guinea-pigs' heart was as suitable an antigen as syphilitic liver. The serum principle had been successfully employed in the diagnosis of typhoid fever and gonorrhœa.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on April 20th, Mr. A. F. Penny, the President, being in the chair.—Dr. J. Blumfeld read a paper on the Nature of Sickness after Anæsthesia and the Best Means of Preventing or Treating It. After a short summary of the physiological aspects of vomiting the different ways in which anæsthetic vomiting might be supposed to be caused were discussed, and the influence of an effect upon the central nervous system was shown to be the most probable. The characteristics of different types of patients and their immunity from or susceptibility to vomiting were considered, and the influence of various drugs, of saline enemata and injections, of position after operation, and of various kinds of operation were discussed in their relation to the question of sickness. In the discussion that followed the President and a large number of the members present took part and many questions were asked, to all of which Dr. Blumfeld very fully replied.

MANCHESTER PATHOLOGICAL SOCIETY.—A meeting of this society was held on April 21st, Dr. W. Milligan, the President, being in the chair.—The President introduced a discussion upon the Pathology of Intracranial Suppuration, limiting his remarks to suppuration of otitic origin. The various micro- and macro-scopical pathways of infection were described and lantern slides of pathological specimens were shown upon the screen. The pathology of extradural, cerebral, and cerebellar abscess was discussed in detail, special reference being made to the organisms most usually found. Purulent and serous meningitis was also fully described and reference was made to the occurrence of posterior basic meningitis in children as a sequel to suppurative labyrinthitis. The pathology of sinus thrombosis and of perisinusal abscess was also discussed. Various pathological preparations and photographs were shown.

Reviews and Notices of Books.

The Principles of Anthropology and Sociology in their Relations to Criminal Procedure. By MAURICE PARMELEE, M.A. New York: The Macmillan Company. 1908. Pp. 410. Price 5*s.* net.

THIS volume, which belongs to the excellent series of handbooks published by the Macmillan Company under the general title of "The Citizen's Library of Economics, Politics, and Sociology," presents in a very interesting and lucid form the argument for the scientific revision of the methods of criminal procedure. Though dealt with in some detail in Ferri's "Sociologia Criminale" and in the works of Garofalo and other writers of the Italian school, this particular aspect of the problem of criminality has hitherto received less attention, at all events in the English-speaking countries, than its importance demands, so that Mr. Parmelee's study of the question, even if all his conclusions cannot be accepted, has the decided merit—not too common in these days of the making of many books—that it supplies a real want.

As is implied in its title, the work is written frankly from the standpoint of the positivist school of criminology; and it may be remarked that the author's enthusiasm for the principles of this school sometimes leaves him open to the reproach of accepting its theories in a rather uncritical spirit. This is most evident in the earlier chapters which deal with the biological factors in crime. In these chapters the author seems to go the length of taking Lombroso's doctrines as the basis for the whole thesis which he seeks to establish in his essay; and in this way he does himself a considerable injustice, for the critical discussion of the methods of legal procedure, which constitutes the really valuable part of the volume, is in fact quite independent of the precarious theory of "innate criminality." From internal evidence it would appear that the author is a lawyer, and it is probable that his lack of first-hand acquaintance with biological knowledge is mainly responsible for this overzealous attitude which has led him to make such rash assertions as that criminal anthropologists "have distinguished between the different anthropological types of criminals" (p. 47). All this, however, is in reality much less material to his argument than the author seems to suggest, and the chief reason, indeed, for pointing it out here is to warn the reader against judging the book by what is its weakest and least important part.

The relation of the criminal to society is next discussed, and the basis of penal responsibility is investigated, the conclusion reached being that, whatever be the phases of its evolution in history, responsibility is now related solely to the principle of social defence. From this point of view criminal procedure is seen to be one of the measures of social defence and to be continuous with the others. It is the process by means of which the class called criminal is separated from the rest of society. Its fitness for this purpose, therefore, will depend on its adaptation to the characteristics of this class, so that, like the methods of penal discipline, it presupposes a knowledge of the biological and bio-social factors that have produced the given criminal act. The principle of individualisation is accordingly seen to apply as much to procedure as to punishment, just as, in medicine, diagnosis is related to treatment. This idea is further developed in two chapters discussing the individualisation of punishment and the principles of the criminal law. The next chapter deals with the forms of criminal procedure, of which two fundamental types are recognised—viz., the procedure of accusation, best exemplified in the English system, and the procedure of investigation, on which the French and most of the continental systems are based. In the succeeding chapters each of the different stages in these two forms of procedure is discussed in detail, and its merits and defects are considered from the point of view of psychological soundness. This critical review brings out very clearly the inadequacy of many of the existing methods of legal investigation, more especially as regards such points as the credibility of witnesses, the functions of the jury, and the selection of judges. In this connexion the admirable researches of Hans Gross on the psychology of evidence might have been more fully discussed.

In conclusion, the author summarises the modifications which he would desiderate in criminal procedure to bring it into accord with the modern scientific spirit. He advocates a much freer use of expert testimony, including the utilisation of the data of experimental psychology for the examination of witnesses. He would have judges better qualified than they are to estimate the force of such testimony by training them in psychology, normal and pathological, and in the other branches of knowledge which have to do with a complete study of criminal man. Such a training would include a sufficient course of clinical instruction in the prison and the lunatic asylum. In lieu of the present system of paid counsel he suggests that the prosecution and the defence should be conducted by trained advocates employed by the State. From these advocates the criminal judges would naturally be selected. This substitution of the expert for the amateur would entail the entire separation of the criminal and the civil bench, the criminal judge becoming a specialist in his own line. In consequence of his specialised training it would also be possible to associate a judge equipped in this way with the whole system of penal treatment, by imposing on him the duty of periodically revising sentences, which, of course, under the conditions contemplated would be indeterminate in duration. Finally, these reforms would include the abolition of the jury, which is, the author thinks, an obvious anachronism.

This brief summary of its contents will give some idea of the scope of Mr. Parmelee's work. It is inevitably open to numerous criticisms of detail, but in its broad lines it may be accepted as a just and well-balanced statement of the ideas which are now becoming current amongst scientific students of legal institutions, and which have already found a footing in the official teaching in several foreign countries. These ideas have, so far, had but little vogue in England, where there is an almost absolute indifference to the sociological aspects of crime on the part of those engaged in administering the criminal law, and it is on this account very much to be desired that so good an exposition of them should meet with the attention which it merits. It may be particularly commended as advocating in the practice of law the same principles which have contributed so powerfully to the progress of medicine.

Les Colloïdes en Biologie et en Thérapeutique. Le Mercure Colloïdal Electrique. Par G. STODEL, Préparateur au Laboratoire de Physiologie de la Sorbonne. Paris: Vigot Frères. 1908. Pp. 282. Price 6 francs.

THIS book is divided into two parts. The first deals with recent work on the subject of colloids in general, or, more correctly speaking, as the author points out, with substances in a colloidal state, since many bodies are capable of existing in both crystalloid and colloid forms. This account is very interesting, calling attention, as it does, to a branch of physical chemistry which lies rather outside the range of most students and which seems to have been somewhat neglected in consequence until recent years. We learn that the colloid state consists in a condition of suspension in

the form of excessively minute particles differing from the condition of solution in which a crystalloid body exists in a state of ionisation. By means of the ultra-microscope the particles in some colloid solutions can be seen; others, however, are too fine for even this instrument to reveal. These minute particles necessarily present an enormous area of surface in relation to their bulk, and the resulting surface-tension along with the electrical charges inherent in the particles accounts for many of the properties of colloids. As all living cells and membranes, as well as the fluids present in living organisms, are in a colloid state, it is clear that a knowledge of the phenomena presented by colloids in general is of importance to the student of biology. The author discusses the nature of diastases and of the different classes of immune bodies in this connexion. Some metals and metallic salts are capable of taking on a colloid form. The use of colloid silver in therapeutics is not new. The author has succeeded in preparing mercury in a colloid form and has tried it as a remedy for syphilitic affections. The record of his work here given, constituting the second part of the book, is interesting, but further research is necessary before we can admit the superiority of the new remedy over the usual preparations of mercury.

The book is clearly written and serves as a useful introduction to a study of the properties of colloids; as such we commend it—as a stimulant to further study of the subject rather than a complete account of the phenomena. It contains references to much recent original work. The print and paper are good, but there are a considerable number of typographical errors.

Hæmatological Atlas, with a Description of the Technic of Blood Examination. By Priv. Doz. Dr. KARL SCHLEIP, Scientific Assistant in the Medical Clinic, University of Freiburg-i.-B. English Adaptation of Text by FREDERIC E. SONDERN, M.D., Professor of Clinical Pathology, New York Post-Graduate Medical School and Hospital, Director of Clinical Laboratory, New York Lying-in Hospital. With 71 coloured illustrations. London: Rebman, Limited. 1908. Pp. 256. Price 42*s.* net.

THE plates of this atlas represent with remarkable fidelity and accuracy the appearances presented by the blood corpuscles in health and disease. The various forms of abnormal corpuscles are clearly depicted, and explanatory descriptions are afforded of each plate. With the exception of a few plates, delineating the appearance of unstained specimens, the illustrations represent the characters revealed by means of the Leishman modification of the Romanowsky method of staining. Uniform magnifications of 330 and 750 have been used. The plates are printed in colour on thick paper and are for the most part circular, with black margins, and represent very accurately the appearance of an ordinary field of the microscope. The plates are affixed to the pages of the book. The explanatory letterpress is printed in large type and the whole book is admirably produced. General instructions are given for obtaining blood for examination and for the preparation and staining of the dried films. The methods for examining a hanging drop of fresh blood and for enumeration of the corpuscles are also described.

The first plate is diagrammatic and is intended to illustrate the development of white and red corpuscles. All human blood cells are traced back to a parent form, and the plate is shown practically in the form of a developmental tree. It is, however, hypothetical and open to criticism in some of its details. The red corpuscle is traced back through the erythroblasts to a large mononuclear basophilic cell represented as one of the primary derivatives of the parent cell. From the derivative the transitional forms, the lymphocyte, the eosinophile, and the basophile cells are also derived, and some of the neutrophiles. Türk's irritation form is figured as a derivative of the lymphocyte. Plates II. and III. represent the general appearances of normal blood; Plates IV. to VII. depict the various forms of human white corpuscles. Very little distinction is made between the large and small lymphocytes; the transitional forms are carefully described and their special characters indicated. Türk's irritation forms are also represented; they occur in leucocytoses and in inflammatory processes. They resemble the large leucocytes and have a large nucleus poor in chromatin. Amitotic nuclear division figures are not uncommon. Other degenerative forms of leucocytes are also figured, including those showing the presence of vascular degeneration. The various leucocytoses, polymorphonuclear and eosinophilic, and lymphocytosis are represented in Plates VIII. to XIII. The appearance of numerous neutrophilic myelocytes in the blood in diphtheria is figured and their occurrence in that disease is described as an unfavourable prognostic indication. Plate XIV. is devoted to the erythrocytes, nucleated red corpuscles, and blood platelets.

The various anæmias are depicted in Plates XV. to XXII. Polychromatophilia and basophile granulation of the erythrocytes are well shown and the conditions under which they occur are enumerated. The features characteristic of various secondary anæmias, including that form due to hereditary syphilis, are also illustrated. Plates are given showing the appearances of the blood in the primary anæmias, chlorosis, and pernicious anæmia.

The various forms of leukæmia form the subject of Plates XXIII. to XXXVII., and the different forms of corpuscle are carefully differentiated and liberally illustrated. Useful outline diagrams are given of the more important specimens reproduced and the names of the various corpuscles are clearly indicated. The blood changes associated with tumours of the bone marrow are represented in Plates XXXVIII. to XL., including carcinoma, sarcoma, and leukosarcomatoses, the latter being a condition described by Sternberg. The concluding section, consisting of Plates XLI. to XLV., is devoted to blood parasites. Various forms of the malarial organism are shown and one plate of the human trypanosome.

The atlas may be taken to present very well the ordinary changes seen in the blood in certain diseases and should be of value to those practitioners who are interested in the hæmatological investigation of their cases and are unable to work out their specimens in a laboratory, for it should enable them to identify the various types of corpuscles. In the preface it is claimed that "an accurate picture of characteristic changes is often better than a detailed description or an imperfect specimen." The atlas should certainly enable the practitioner to interpret the results he obtains with films from actual cases.

The Cell as the Unit of Life, and other Lectures. (An Introduction to Biology.) By the late ALLAN MACFADYEN, M.D., B.Sc. Edin. Edited by R. TANNER HEWLETT, M.D. Lond., F.R.C.P. Lond., D.P.H. London: J. and A. Churchill. 1908. Pp. xvi.–381. Price 7*s.* 6*d.* net.

THE courses of lectures included in this volume were delivered by Dr. Macfadyen at the Royal Institution, London, during his tenure of the office of Fullerian Professor of Physiology from 1899 to 1902. Dr. Hewlett has done his work as editor excellently, but in his short introductory biographical notice of Dr. Macfadyen he has been misinformed as to the names of one at least of Dr. Macfadyen's teachers in Edinburgh—viz., "Sir Croom Halliday." Dr. Macfadyen did excellent work in the domain of cell life and bacteriology, and all too soon, at the early age of 46 years, he fell a victim to his zeal in research, accidentally infecting himself with

typhoid and Mediterranean fevers, from which he died in March, 1907.

The following statement shows the scope of these lectures. "The Cell as the Unit of Life" is dealt with in five lectures (March and February, 1899); "Cellular Physiology" in six lectures (1901); to "Recent Methods and Results in Biological Inquiry" (1902) are allotted three; and to "Toxins and Antitoxins" (April, 1899) four lectures. A Friday evening lecture, "On the Effects of Physical Agents in Bacterial Life" (1900) completes an interesting series. The lectures give a clear, straightforward, very readable account of cell life, and form an admirable introduction to the study of biological problems associated with the cell in all its aspects as a living and productive organism in its morphological, structural, and chemical relations. Necessarily there is a certain amount of overlapping where the theme is cellular from start to finish, and where the simplicity of thought and diction are very marked it must be recollected that the lectures were no doubt well adapted for the audience at the Royal Institution. In the first course protoplasm and all that belongs to it is dealt with, including cell life in general; a short account of the ferments is given, and the responses of protoplasm to stimuli are explained. The second course deals in a general and interesting manner with enzymes, and fermentations and their importance both in the arts and in science, as well as their relations to the germ theory of disease. The course on methods of biological inquiry is a short one, and treats of, amongst other subjects, nitrification, phosphorescence, toxins, agglutination, and life at low temperatures. As bacteria retain their life at the temperature of liquid air and become extremely brittle this led the author to triturate them at this low temperature, and in this way a pure cell plasma without an admixture of sand and Kieselguhr was obtained. It was shown that the typhoid bacillus contains within itself a toxin and in this way devitalised intracellular toxins were obtained from bacteria. As the lectures on toxins were delivered in 1899 the editor has added a few notes to the methods outlined in the lectures.

The whole is pleasantly written and gives an admirable summary of cell life which could be understood by a lay audience such as that which attends the discourses of the Fullerian professor for the time being at the Royal Institution. There are appended a glossary and a list of Dr. Macfadyen's publications.

The Struggle against Tuberculosis in Sweden. Edited by STURE CARLSSON, M.D. With illustrations. Issued by the Swedish Government. Stockholm: Central-tryckeriet. 1908. Pp. 200.

AMONG the progressive nations of Europe seeking to combat tuberculosis with scientific precision Sweden occupies a foremost place. Something of Swedish methods and measures have already been detailed in this journal.[1] We therefore gladly draw attention to the admirable collection of studies prepared by a representative Swedish committee and dedicated to the International Tuberculosis Congress recently held in Washington. The work is one of which Sweden may well be proud. It should certainly be carefully studied by those in this and other countries who are desirous of seeing anti-tuberculosis work organised on rational lines. It is a record of medico-sociological experience and scientific experiment rich in suggestive value and amply testifying to the benefit of coördination and coöperation of medical, social, economic, and humanitarian effort and service. Dr. Bertil Buhre, the able secretary of the Swedish National Anti-Tuberculosis Association, describes the far-reaching influence and benefits wrought by this truly national body. Other contributions of great value follow, detailing the results of anti-tuberculosis work in various parts of Sweden. Dr. John Tillman of the Österasen Sanatorium, contributes a thoroughly common-sense essay on Sanatorium Treatment at Home; Mrs. T. Gelhaar describes the charity stamps which have proved so popular and successful a means for raising revenue; Dr. Emil Wadstein of the Hessleby Sanatorium writes of King Oscar the Second's Jubilee Fund and its service in establishing and administering public sanatoriums for Sweden's consumptives; Dr. C. E. Waller furnishes notes on physical methods of diagnosis; Dr. Sture Carlsson, of St. Göran's Hospital at Stockholm, deals with the various institutions existing for the treatment of tuberculosis in Sweden; and there are other articles of clinical and pathological interest. We have, however, furnished sufficient proof to substantiate our opinion as to the value of this notable volume. No serious student of the tuberculosis problem can afford to be neglectful of such a record of Scandinavian thought and enterprise. The volume is handsome in appearance, well illustrated, excellently printed, and the English, although occasionally quaintly expressed, is generally clear and attractive. All concerned in the production of the work are to be congratulated.

[1] THE LANCET, July 18th, 1908, p. 186.

La Pratique des Maladies des Enfants (Diagnostic et Thérapeutique). Secrétaire de Rédaction: R. CRUCHET. Fasc. I. Introduction à la Médecine des Enfants: Hygiène, Allaitement, Croissance, Puberté, Maladies du Nouveau-né. Par A.-B. MARFAN (Paris), J. ANDÉRODIAS (Bordeaux), et RENÉ CRUCHET (Bordeaux). Paris: J. B. Baillière et Fils. 1909. Pp. 476. Price 10 francs.

THIS is the first fasciculus of a comprehensive work on diseases of children, to which no less than 24 authorities from the different French schools are to contribute, the general editorship being in the hands of Professor Cruchet of Bordeaux. The editor points out the increasing importance now attached to care for the health of the young and notes that the problems most urgently calling for treatment differ somewhat in different countries. Thus in France the fall in the birth-rate is most disquieting, in England the mortality which occurs in early infancy, and in Germany the incidence of nervous affections and even of suicide among children of a rather later age. He claims that the study of children's diseases is a specially French branch of medicine, and if the other volumes of this work maintain the standard set in the first we shall be inclined to admit the truth of the claim. The articles here set before us are most interesting and stimulating. The first 100 pages are occupied by a section written by Professor Marfan, dealing with general considerations on the peculiarities of the disorders of children, and embracing such points as the bacteriology of the infant's alimentary canal, the effects of boiling on milk, and the causation of some of the special forms of wasting or athrepsia met with in infants. The second section, occupying the greater part of the volume, is by Professor Andérodias, and is devoted to the maladies of the new-born child, malformations and obstetrical paralyses, hæmorrhagic conditions and infections, and above all the detailed consideration of artificial feeding. A short chapter on the disorders of later childhood by Professor Cruchet is notable for its advice as to the moral training of children so far as their desire for information on sexual matters is concerned.

Different countries are distinguished by different points of view in matters of science no less than in literary or moral spheres, and it is most useful for all physicians to endeavour to correct any onesidedness in their views by studying those of their colleagues in other parts of the world. For this reason especially, no less than for its general excellence, we cordially recommend the study of this book to all who

are interested in the diseases of children. It is clearly and pleasantly written by men who are experts in their subjects, and should constitute an authoritative text-book of modern French practice in this department.

Die Neurologie des Auges. By Dr. H. WILBRAND, Ophthalmic Surgeon, and Dr. A. SAENGER, Neurologist, in St. George's General Hospital, Hamburg. Vol. IV., Part 1: The Pathology of the Retina. Wiesbaden: J. F. Bergmann. 1909. Pp. 463. Price 18 marks.

Qu'allaient-ils faire dans cette galère? Wilbrand and Saenger's "Neurology of the Eye" continues to pursue its long and tortuous path, but the goal seems as far off as ever. After bulky volumes devoted to the neural pathology of the lids, lacrymal apparatus, and cornea we were plunged into a long disquisition on the anatomy and physiology of the optic paths and centres, in which the authors considered it their duty to include a comprehensive account of what is usually known as physiological optics. "*Revenons à nos moutons!*" said the authors, this lengthy excursion into pure physiology over, so they gave us 600 pages on the general diagnosis and symptomatology of defects of vision. Alas, their pesky conscience seems to have troubled them again. The retina is part of the nervous system; therefore, every abnormal retinal condition belongs to the neurology of the eye, so they make a valiant plunge into pure ophthalmology. "It may well seem surprising to many," they say, "that we should have devoted so much space to the pathology of the retina." We agree. But here it is, and on the whole it has been done quite well, though not so well as the purely neurological parts. They are more at home with their sheep than with their goats. It is, perhaps, sufficient to say that the half volume (463 pages) deals with nearly all the retinal disorders which are usually treated in an ordinary text-book of ophthalmology. We prefer to confine our criticism to the one definitely neurological section, one of 20 pages on amaurotic family idiocy. It betrays the tendency which has been shown before by others to obscure this peculiarly characteristic disease by including under the same designation other conditions which bear only a feeble resemblance to it. Thus, undue prominence is given to Vogt's papers on the so-called juvenile form of amaurotic family idiocy, which really belongs to an entirely different class. The bibliography given of the disease is by no means exhaustive and is vitiated in the same manner by the inclusion of cases having only an indirect bearing upon the subject. Wilbrand and Saenger's "Neurology of the Eye" is a most valuable work, but we would urge the authors to confine themselves more accurately to pure neurology and to venture into the domains of physiology and ophthalmology only in so far as is essential for the thorough elucidation of their special subject.

LIBRARY TABLE.

Modern Methods of Sewage Disposal. By W. H. TRENTHAM and J. SAUNDERS. London: The Sanitary Publishing Company. 1909. Pp. 60. Price 2*s.* 6*d.* net.—This is a simply written little book, intended primarily for the use of members of local authorities and their officials. The authors state that they have had 20 years' experience in the design, construction, and practical management of sewage works, and they deal with such matters as sewer construction, the various methods of sewage purification, and finally they have a chapter on "The Ideal Method of Treating Sewage." Their own scheme, which they allow falls short of the ideal which at present is impossible, is described. House refuse and the screenings of the sewage are dealt with in a destructor which raises steam which again is converted into electrical energy. The sewage proper is dealt with in aerobic slate beds and filter beds. The book, of course, does not go deeply into the subject but as an introduction to the study of a most important part of public health it will be found useful.

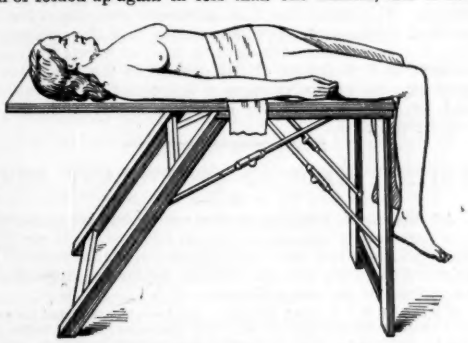
JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. II. No. 7. April, 1909. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum. Single numbers 8*s.* 6*d.* each.—This number contains the following papers: 1. Bronchiolectasis in Children, with reference to the Condition known as Honeycomb Lung, from a clinical standpoint, by Ernest Leach. Five cases are described and the clinical features are analysed. The morbid anatomy and causation of the condition are also discussed. 2. Vaso-dilators in High Blood Pressure, by Edwin Matthew. By means of hæmomanometric observations certain conclusions are drawn as to the individual and relative action of nitrites and organic nitrates, and various recommendations are given as to the dosage of the therapeutic nitrites. 3. Further Researches on the Etiology of Endemic Goitre, by Robert McCarrison. Evidence is offered of the experimental production of goitre by the administration of suspended matter filtered off from waters known to produce goitre in Gilgit. Boiling the material deprives it of its power of inducing goitre. The incubation period of experimentally produced goitre is from 13 to 15 days, and the disease can be cured by the administration of internal antiseptics. 4. Infective Endocarditis, by Thomas J. Horder, with an Analysis of 150 Cases and with Special Reference to the Chronic Form of the Disease. This paper contains a valuable account of the various forms of infective endocarditis, and special attention is given to the bacteriology and to the treatment. 5. Acidosis: a Critical Review, by Edmund I. Spriggs, giving an interesting summary of the conditions leading to acidosis and of its occurrence in association with diabetes and certain toxæmic states occurring clinically.

New Inventions.

A NEW OPERATING TABLE.

A new portable operation table made by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W., to the specification of Dr. Comyns Berkeley is illustrated below. It has many advantages and has been found by Dr. Berkeley to be extremely useful. It can be opened and fixed in position or folded up again in less than one minute, and it has



been tested to take patients weighing up to 20 stones. The table is made of oak, the measurements being: length, 48 inches; width, 21 inches; height, 32 inches. The weight is 31 pounds. It fulfils perfectly the objects for which it was designed and will be found equally useful for operating either in the Trendelenburg or the lithotomy positions.

Unlike many operation tables on the market which profess to give the correct Trendelenburg position and fail to do so, this table, Dr. Berkeley considers, is in this respect perfect, and the mechanism by means of which the top is raised and lowered is very simple and works very easily. On being practically tested this table was found to answer the purpose for which it was constructed, but we suggest that when used care should be taken to interpose a well-folded blanket between the edge of the table and the popliteal space.

A HYGIENIC CORSET.

WE are often pressed to express an opinion upon some departure from the usual forms of wearing apparel, but seldom find ourselves able to say much in favour of the modification, which even though recommended to us by members of the medical profession fails commonly in fulfilling the claims made for it. A combined corset and surgical belt, however, which has been submitted recently for our inspection by Mrs. Morison of 26, South Molton-street, London, W., deserves to be brought to the notice of our readers. It provides a comfortable and adequate appliance for many invalids and for others who, while hardly invalids, are recommended some form of surgical belt. By a skilful method of cutting the corset and belt all in one piece the advantages of a surgical belt are secured and a suitable apparatus is furnished applicable in cases requiring abdominal support. This combined corset and surgical belt is so constructed, the inventor claims, that it not only gives abdominal support but leaves the ribs and diaphragm free from compression, so that respiration is not interfered with. We made trial of the corset with particular attention to this matter, and in our view the breathing is not incommoded by any pressure which the lower or "belt" part of the appliance may exercise on the abdominal planes. The corset is, of course, "cut" smaller in the groin than in the abdomen, so that when the front and sides are laced an upward pressure is given to the abdominal contents and the wearer is able to assume the erect posture with greater comfort and to take valuable exercise much earlier after an operation. An inspection of the accompanying illustration will show how this corset is well adapted to replace the surgical belt in many common conditions. The technical name of the material of which the corset is made is "tricot," which we should describe as a sort of clinging stockingette possessing great elasticity without, however, containing elastic. This corset has been successfully employed for the relief of troublesome symptoms during and after pregnancy and has been found efficacious in cases of hernia, moveable kidney, and weakness of the spine. In the treatment of pendulous belly the advantages of this corset are self-evident, and by suitable alterations it can be made applicable for other conditions.

Combined corset and surgical belt.

BRITISH MEDICAL BENEVOLENT FUND.

AT the April meeting of the committee 23 cases were considered and grants amounting to £204 5s. made to 20 of the applicants, two cases being passed over as unsuitable for help and one postponed for further inquiries. Appended is an abstract of the cases relieved:—

M.R.C.S., L.R.C.P., aged 31 years. Has been incapacitated for some time by ill-health and exhausted all his resources; is now better and able to undertake a little light work, but requires immediate help to purchase a few necessary articles of clothing, &c. Voted £2 5s.

Widow, aged 38 years, of M.B., Ch.B. Glasg. Lost her husband soon after marriage and is at present dependent on relations who can ill afford to help. Proposes to train as a maternity nurse and friends promise to pay part of the expenses. Voted £5 conditionally upon the balance of the money being found.

Widow, aged 60 years, of M.R.C.S. No income; endeavours to support herself by letting lodgings; children only able to give very slight help. Relieved three times, £34. Voted £15.

Widow, aged 61 years, of M.R.C.S. Quite unprovided for at recent death of husband, whose means were exhausted by a two years' illness. No children. Voted £12.

Daughter, aged 61 years, of M.R.C.S. No means; has been given a home for some years past in return for services, but fears she will soon have to give it up. Voted £5.

Daughter, aged 64 years, of late M.R.C.S. No income; used to act as housekeeper to a brother, and after his death qualified as a maternity nurse, but now obtains so few cases that she is obliged to apply for help. Voted £12.

Widow, aged 56 years, of L.R.C.P., L.R.C.S. Edin. No income, and since husband's death 20 years ago has supported herself as children's nurse, &c., but has recently been incapacitated by a serious illness which has exhausted her small savings. Voted £12.

M.R.C.S., aged 70 years. Until a few months ago was in practice but has recently undergone an operation for gangrene and is now quite incapacitated. Slight help from children. Voted £18.

Daughter, aged 59 years, of late M.R.C.S. Allowed 5s. a week by friends and earns about the same amount by needlework. Relieved twice, £30. Voted £12.

Daughter, aged 59 years, of late M.R.C.S. Is given a home in return for services but requires help for dress and other unavoidable expenses. Health very indifferent. Relieved seven times, £108. Voted £12.

Daughter, aged 48 years, of late M.R.C.S. Is a confirmed epileptic and consequently unable to follow any occupation. Dependent on a brother-in-law who can ill afford to help and receives £10 a year from the National Hospital for the Paralysed and Epileptic. Relieved twice, £22. Voted £12.

Daughter, aged 43 years, of late M.R.C.S. For many years past has been obliged to nurse her recently deceased mother, an annuitant of this Fund. Hopes now to support herself by letting rooms, but requires a little help meanwhile. Relieved once, £5. Voted £5.

Daughter, aged 66 years, of late M.R.C.S. Has supported herself by teaching for 43 years, but is now unable to do so. Health indifferent and sight failing; no means; earns a few shillings occasionally by knitting. Relieved once, £12. Voted £12.

Widow, aged 62 years, of L.F.P.S. Glasg. Only income £10 a year from a charity. No children. Lets rooms, but has great difficulty in obtaining lodgers, and is in very bad health. Relieved six times, £60. Voted £10.

Daughter, aged 60 years, of late M.D. Aberd. Has given music lessons for nearly 40 years, but finds increasing difficulty in getting pupils, and is in a very feeble state of health. Relieved twice, £20. Voted £10.

Widow, aged 49 years, of L.R.C.P., L.R.C.S. Edin. No income, dependent on two sailor sons, both at present out of work. Relieved five times, £51. Voted £12.

Widow, aged 61 years, of M.R.C.S. Eng. No income, slight help from friends; a son sends a few shillings occasionally. Is quite incapacitated by permanent ill-health. Relieved three times, £36. Voted £12.

Daughter, aged 53 years, of late M.R.C.S. Is unable to earn a living and dependent on three sisters who have to support themselves. Voted £5.

Daughter, aged 25 years, of late M.R.C.S. Health quite broke down after nursing her mother through a long illness ending in death, and for some months past has been an inmate of different institutions. Relieved once, £6. Voted £6.

Widow, aged 66 years, of L.R.C.P. Lond. No income; unprovided for at husband's death about 20 years ago and has supported herself by a boarding house, but now finds it impossible to make both ends meet. Relieved three times, £36. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

QUEEN'S COLLEGE, BELFAST.—The following prizes for the session 1908–09 were awarded at the class examinations in medicine recently held:—Zoology: J. B. Lyle, N. Beattie, W. S. Lynd, B.A., and T. Walker. Chemistry—Senior: W. G. Glendinning. Junior: J. M. Bell, A. K. Macbeth, and W. M'K. H. M'Cullagh. Practical chemistry—Senior: J. Greer. Junior: J. G. Wilkin, C. L. Gaussen, S. R. Armstrong, J. R. Henry, A. M. Glendinning, and J. Lyons. Chemical laboratory: W. G. Glendinning. Anatomy—Senior: F. Crooks and T. D. Graham. Junior: J. H. Beverland, S. R. Armstrong, and W. M'N. Walker. Practical anatomy—Senior: A. Hegarty, S. R. Armstrong, T. D. Graham, H. W. M'H. Wallace, C. L. Gaussen, F. Crooks, and J. R. Henry. First year: J. M'I. Gibson, W. M'N. Walker, and N. C. Graham. Physiology—Senior: R. J. M'Connell, F. Crooks, and M. J. M. Stewart. Junior: W. J. Hunter, B.A., S. R. Armstrong, J. H. Beverland, C. L. Gaussen, and W. M'N. Walker. Practical physiology—R. J. M'Connell and W. M. O'Farrell. Practical histology: J. H. Beverland, L. D. I. Graham, S. R. Armstrong, W. M'N. Walker, M. J. M. Stewart, J. Lyons, and J. J. H. Mitchell. Special prizes for histology demonstrations—J. H. Beverland, S. R. Armstrong, and H. W. M'H. Wallace. Materia medica—F. Crooks and J. A. Hutchinson. Medicine—R. A. Kerr and A. W. Connolly. Midwifery, gynæcology, and diseases of children—H. Black, C. J. Simpson, W. A. Anderson, R. A. Kerr, S. E. A. Acheson, and M. C. Irwin. Surgery: H. Black, S. E. A. Acheson, and B. M'Cullough, B.A. Ophthalmology and otology—H. Black and C. J. Simpson. Sanitary science—H. Black, C. J. Simpson, R. A. Kerr, and S. E. A. Acheson.

THE LANCET.

LONDON: SATURDAY, MAY 1, 1909.

Academic Distinctions.

HAMLET, it may be remembered, was at school at Wittenberg, but it may perhaps be assumed, even with a near approach to certainty, that the kingdom of Denmark possessed no University at the time, for if it had done so it is inconceivable that POLONIUS should have omitted to include the possession of a distinction thence derived among his various recommendations to the departing LAERTES, or that he should have failed to recognise to how great an extent the judgments of mankind are often dependent upon labels rather than upon the properties which these labels are supposed to indicate. We do not intend in the least degree to undervalue university distinctions; but we cannot close our eyes to the fact that universities are becoming numerous, and that the desire to possess an academic title, which has long been prevalent in the medical profession, may, perhaps, be in progress of being gratified at the expense of some diminution in the value of the result; not because the universities are willing to lower their standards, for the contrary obtains, but because the demands of medical education are not such as to be entirely satisfied by the curriculum which is naturally crowned with a degree. The fact of being a Doctor of Medicine or a Master of Surgery should undoubtedly carry with it a reasonable presumption that the bearer is a man exceptionally fitted to cope with medical or with surgical emergencies; but we very much doubt whether the facts will invariably support the presumption, or whether the tests to which candidates for medical or surgical academic honours are required to submit are always, or necessarily, of a kind to indicate real proficiency in the application of knowledge to the events of life or to the control of disease. The tests in question are usually such as to facilitate the display of what may be called "cleverness," quickness of faculty in the production of small change for the gold of knowledge; and the power of passing through them in a manner satisfactory to examiners, and so as to acquire the right to assume some distinctive label, although usually indicative to say the least of a certain degree of self-control and self-sacrifice, is none the less to some extent dependent upon pecuniary means and upon perseverance, and is at best a very imperfect criterion of the special aptitudes, the resourcefulness, the courage, and the presence of mind which combine to render the practitioner who is endowed with them a tower of strength in the sick room, and which qualify him to exercise professional authority in the gravest emergencies. It is the business of the stage to "hold the mirror up to nature," and SHERIDAN KNOWLES was fully justified in rendering FONDLOVE'S proficiency in the *Ars Amatoria* of OVID but slenderly helpful to him in the conduct of his actual courtship of the lady of his affections. We believe that a power of answering difficult questions with facility and smoothness may sometimes be of as little value to a practitioner; and we fear that the growing tendency to confine great professional facilities, hospital appointments and the like, to candidates of high academic standing may not, in the long run, prove to be of unmixed advantage either to patients or to the profession.

The recent republication by Sir ALMROTH WRIGHT, under the title of "Studies in Immunisation," of the many papers in which he and his fellow workers have from time to time set forth their results in the direction of vaccine therapy, has afforded to the distinguished author an opportunity, of which he has not been slow to avail himself, of expressing his manifestly deep conviction that the contemporary medical practitioner, though he be graduate with honours, has not as a rule received a sufficient scientific training to render him fully qualified for the exercise of his calling. This will be surprising reading to those who know the range of the present medical curriculum, and the length of time required by the average medical student before he can obtain a place upon the Medical Register. Sir ALMROTH WRIGHT tells us that in every other department of practical life, in shipping, for example, or in railways, a much higher standard of responsibility is enforced than in medicine, and he predicts that this laxity will not be indefinitely permitted. "The higher standard of responsibility, which is enforced everywhere else in civilised life, will also be enforced in medicine when we have shaped it into something more like a scientific profession." ..... "So long as we as a profession go on hankering after the impossible, so long as we demand of every new therapeutic method that it shall, after the manner of a magic wand, achieve the marvellous with little labour, and that it shall give its best results even when it is applied in an absolutely blind empirical manner, so long will disillusion continue to dog the steps of medicine. There will be an end, once and for all, of such clamouring for the moon as soon as science shall have imported order and measure into our expectations." Many other passages of like kind are dispersed throughout the volume, and they all express a profound conviction of the utter inadequacy of the "rule of thumb" practice which many observers believe to be forced upon our students by the exigencies of the present education. If the existing degree of recognition of the value and importance of the work of the clinical laboratory as a guide to the daily work of the practitioner has scarcely at all led to a definite increase in the direction of endeavours to qualify him to undertake such work for himself, but rather to a passive acquiescence in its performance by a few persons as a sort of specialty, the professors of which must be consulted by practitioners when the latter require guidance which the generally familiar forms of investigation are inadequate to give, our scientific progress in the profession as a whole is not as great as it is believed to be. The tendency of such a course must manifestly be to place a gulf between the investigator and the practitioner, and to induce the latter to rest upon laboratory conclusions blindly, and as by rote, without any reasoned endeavour to bring them into continuous harmony with the facts observed at the bedside. We believe that

never before were there so many practitioners striving to keep abreast with the rapidly developing knowledge of pathology and therapeutics; but the equipment of the modern medical man is a very elaborate one, and he who falls behind soon comes to occupy a hopeless position in the race. If it be admitted, as we think it must be, that the advances of modern medicine are to be looked for, during the next few years at least, chiefly in the direction of laboratory work, or of what is commonly understood by "research," we ought to expect in medical education as it is now conducted, even when academic honours are at its goal, a definite tendency towards the production of scientific men. The aim of the curriculum should be to qualify all members of the medical profession either to conduct laboratory investigations for themselves, or fully to appreciate their value when conducted by others. The question necessarily arises how this condition of things may be reached—how medical education may be so modified as better to prepare those who undergo it for the class of duties which, at no distant period, they will inevitably be expected to perform. The range of study is large and the time at the disposal of the student is all too short. The universities, old and new alike, are striving to give to science the practical attention which should ensure the production of scientific medical practitioners, and the same may be said of the various corporations, but even so it is difficult to see how the average man is to find time to master the chemical, physiological, or pathological investigations upon which, in the long run, we must rely for the cure of individual disease and for the preservation of the health of communities. Certainly we do not find that those who have achieved the greatest academic distinctions necessarily excel as practical men, while it must be admitted that those who do so may in some instances find it difficult to appear before the public in their right position, in consequence of not having obtained the label which carries conviction to the public mind. And all this may be read as showing that the medical curriculum is overloaded.

We have heard it suggested, and argued with considerable weight, that the medical profession is not likely to be completely qualified for the discharge of its duties until the scheme of its education is completely remodelled in a fashion analogous to that which obtains for the Royal Navy, and until the future medical man, like the future naval officer, is set apart from his very boyhood, and is compelled to devote himself continuously to studies bearing upon the work of his intended calling. The difficulties in the way are threefold, the first of them being that the public, as at present advised, are not disposed to reward skill in medicine with sufficient liberality to induce parents to incur heavy cost in qualifying their sons to attain it; the second being that the suggested isolation from students of other classes might tend to diminish capacity for dealing with the many personal and private questions with which the life of a medical practitioner becomes so inextricably blended. In the third place, who is to pay those who undertake this prolonged and costly scheme of education? We doubt whether any one of these objections is insuperable. It can scarcely be doubted that a definite improvement in the general character of medical work would be followed by a corresponding elevation of the standard of remuneration accorded to it; and we do not know that the naval officer is less conspicuous than his subordinate, the proverbially "handy man," in his power of mental adjustment to the conditions in which he is called upon to work. But we have to regard the idea, at any rate for the present, as visionary. All that we can yet hope for is the gradual lengthening of the statutory time of the medical curriculum, and the introduction of simplifying modifications into the examinational schemes, as partial remedies for the existing unsatisfactory conditions. In particular, any signs of effective union between the universities and the corporations will be of promise, as tending to place all qualified men on a more practical footing of equality, and so allowing the best of them to come to the front by the merits of their professional work.

The Position of Plague in India as Illustrated at the Bombay Medical Congress.

IT is now 12½ years since plague first appeared in Bombay, and during this period it has caused approximately six and a half million deaths. So far, in 1909, the death-rate has been low, but too much stress must not be laid upon this, as the rises in mortality which have occurred from time to time during the long epidemic have had no distinct causes. The cynical might say that plague in India has not been without its advantages. Before its advent the Government of India were engaged in discussing what was considered to be one of the great problems of the future—viz., how to relieve India of a surplus population through emigration. That problem has certainly been solved in some districts. Medical science has also benefited indirectly as well as directly, for the vast plague mortality stirred public opinion, so that a Royal Commission was appointed, and to this we owe the birth of the many fine research laboratories which have come into existence recently, the work in which has been the subject matter of many most valuable papers and discussions at the Medical Congress recently held at Bombay. But there is, alas, another side to the matter. On the top of the colossal tragedy implied by these millions of deaths we have to remember that in certain districts there was swept away some of the finest recruiting stock for the Indian Army, while the persistence of the epidemic, and particularly the measures which have been taken in some places to arrest its devastations, have led to acute unrest in the native population. On every ground, humanitarian as well as political, we must all hope that the existing promises of permanent abatement will be fulfilled.

The contributors to the proceedings at the Bombay Congress,[1] to which we propose to refer especially, are for the most part experts employed either in research work in Government laboratories or in active plague prevention. The research done has been well carried out by devoted workers in India who have caught the true spirit of scientific research. The newly equipped laboratories which

[1] A special supplement to the *Indian Medical Gazette* for March contains a good précis of the proceedings of the Congress.

provided facilities for earnest work can, therefore, be intelligently used, and the country is benefiting by the great financial outlay in a corresponding manner. The result of this organised research is now unfolding a new state of affairs as regards plague etiology and prevention. The story is worth recapitulation as a chronicle of advancing knowledge. As is generally known, rats have been associated with plague from time immemorial. The ancient Egyptians figured them in their crude drawings and referred to them in their writings. In modern times the facts that rat mortality preceded outbreaks of plague in man and that there was a disappearance of rats after plague epidemics had worn themselves out were observed, but they were thought to be a coincidence until bacteriological investigation proved that rat mortality was due to the bacillus pestis. The rat was then perceived to be a probable source of the spread of infection and attempts were made to prove it, but not at first with success. Other sources of contagion were examined. Plague patients were said to spread the disease by contact and by their excreta; and it was argued that, as rats die from plague, their excreta, which foul human dwelling places, might aid to infect man; while rats, which will eat their own dead, might keep the infection up. Then, as was inevitable, the work of those who had shown that blood-sucking insects were often the causal agents of the spread of disease, carrying infection from animals to man, and *vice versâ*, attracted the notice of those working on the investigation of plague, and thus the hint was given that plague might possibly be propagated by some form of parasitic blood-sucking insect common to man and rats. In India vermin and parasites of all kinds, especially fleas, are very common; the lower classes of natives and their dwellings are always infested by them, and once attention had been directed to the possibility of some such insect as the flea being the medium of infection the rest followed. It has now been definitely proved that any species of flea common to rat and man is capable of propagating the disease, if it is not also the chief means of so doing. Major GEORGE LAMB, I.M.S., member of the Advisory Committee for Plague Investigation, in a paper read before the Bombay Medical Congress, has given a very complete *résumé* of the epidemiology of plague and comes to the following general conclusions, which he considers of the greatest importance from a prophylactic point of view (we quote his own words): "1. Bubonic plague in man is entirely dependent on the disease in the rat. 2. The infection is conveyed from rat to rat, and from rat to man, solely by means of the rat flea. 3. A case of bubonic plague in man is not in itself infectious. 4. Insanitary conditions have no relation to the occurrence of plague, except in so far as they favour infestation by rats. 5. Plague is usually conveyed from place to place by imported rat fleas which are carried by people in their persons or in their baggage. The human agent not infrequently himself escapes infection."

The general subject of the prophylaxis of plague in an infected country was treated at the Congress in a paper by Captain W. GLEN LISTON, I.M.S., of the Plague Research Laboratory at Parel. He also pointed out that plague was essentially a rat disease and compared its spread by animals to rabies and glanders. He dwelt on the means and methods best suited for rat extermination and the difficulties of the proceeding owing to the defects in native houses, the general want of a sanitary environment, and the abundance of food—grain and garbage—available for rats in places where natives sleep. Captain LISTON advocates the systematic setting of large numbers of rat traps in accordance with a well-organised plan of campaign, for he has noted that where the trapping of rats has failed the cause is due to lack of organisation, defective operations, and want of appreciation of the magnitude of the task by those engaged on the work. Plague is carried by infected rat fleas either on the person, in wearing apparel, bedding, or in merchandise, to rats and human beings elsewhere. Disinfection of all domestic and personal environment is therefore of the utmost importance, and the comparative success of stopping the spread of plague from India over sea must to a great extent be attributed to this precaution. Rat extermination is therefore the first practical step to be taken. A method of rat extermination formed the subject of a valuable communication to the Congress by Lieutenant-Colonel A. BUCHANAN, I.M.S. His advocacy of the cat as the most obvious method of destroying rats should appeal to natives of India, especially Hindus, who from their religious doctrines are forbidden to take the life of rats. The cat, if not too well fed, is the natural enemy of the rat and does not become infected with true plague. Professor SHIGA of Japan, who was present at the Congress, bore testimony to the efficacy of cats in plague epidemics in the Far East. The importance of preventing the carriage of plague by sea, emphasising the necessity of disinfection of clothing and destroying of rats in the docks of infected seaports, was put forward by Dr. G. J. BLACKMORE, who regarded any other attempt to hinder rats getting on board ships in wharf as ineffectual.

The good effects of anti-plague inoculation (by vaccine prepared by the Haffkine method) were ably demonstrated by Major R. F. STANDAGE, I.M.S., based on work done in Bangalore in house-to-house inoculation.[2] Amongst a population of 89,599, including the military garrison, 40,573 inoculations were carried out; of these 33 contracted plague, 13 deaths occurring; 13 of the former and nine of the latter may be discounted as the disease occurred within ten days of inoculation, thus leaving 20 attacks with four deaths. Amongst the 49,026 non-inoculated 1653 attacks with 1387 deaths occurred. These figures speak for themselves. Householders popularised the movement by giving "Inoculation At Homes." The debatable question of Recrudescence of Plague was introduced by Major S. BROWNING SMITH, I.M.S., who has had charge of the plague preventive measures in the Punjab for many years. In some of his districts plague has recurred after long intervals, during which no signs of infection reaching the area or existing in it were apparent. He attributes the non-prevalence to the fact that the rat population becomes so thinned out or exterminated during an epidemic as to render their power of spreading the

[2] Fully described in THE LANCET of June 6th, 1908, p. 1664.

disease futile for a considerable period. We may observe that this appears to support the theory already formed that plague is kept "going" by its power of affecting some rats without fatal results and that these rats (often recognisable by ulcerous conditions of their bodies) act as "carriers," the disease remaining quiescent until fresh arrivals coming from the fields after the harvest become infected. Major BROWNING SMITH has also noticed that geographical conditions, particularly rivers, aided the prevention of the spread of plague, and he gave corroboration to rat mortality occurring as a forewarning sign to plague recrudescence.

The Defence of Science.

IT has probably been the experience of many medical men, as it has been our own, to be present when some member of a mixed company of intelligent and cultured people has chanced to make mention of experiments upon animals, and perhaps to introduce the topic with the word vivisection. At once the smooth interchange of ideas and opinions has been broken by voices raised in sharp remonstrance, and the man who has innocently provoked the little storm is surprised to hear persons, marked generally by their liberal outlook upon the world and sympathetic appreciation of work done in fields not their own, pouring out vials of unjust wrath and prejudice upon the heads of men who are devoting their whole energies to the study of the laws of life and to the establishment of sound defences before each of the many gates by which disease may attack its citadel. And when a calmer spirit has been restored, in nearly every case a little accurate questioning will prove that the accusers of science have spoken with such warmth, not out of malice, but out of ignorance. Ridiculous as it may appear in the telling, the attack may have been based simply upon an attachment to a dog friend, a feeling which commands everyone's respect and one which should not be warped by the dread that a band of imaginary descendants of BURKE and HARE, practising in canine circles, are lurking round street corners to pounce upon the household pet and bear him off to the "vivisector's laboratory," there to suffer a lingering death of unspeakable torture with the sole reason of satiating a useless curiosity or a lust for inflicting pain. Suppose that a medical man present on such an occasion (regardless of the pleasant suggestion, which will be made if temper is running high, that he is one whose profession naturally makes him indifferent to suffering owing to his constant association with it) can gain the ear of the company and persuade them to listen to a short exposition of the methods of, and the regulations which control, scientific research and of its claims upon the gratitude of mankind —suppose this, and the result of the debate will often be that the denouncer of science will look in the future with more kindly eyes upon the exponents of experimental procedures as applied to the advance of medicine in this country at the present day.

We are re-telling a phase of an old story, but we are prompted to do so because it is an ever-recurring phase of a true story, and one in which we are convinced many of our readers have acted, and will act, a part. And in order that they may be prepared to do so to the advancement of their calling and the honour of their science we desire to bring to their notice a volume of publications of the Research Defence Society[1] which have been selected by the committee from amongst those issued during the first year of the society's campaign. The chief of these papers, which include Lord CROMER'S presidential address at the public inauguration of the Society, received our prominent notice at the time of their first appearance in pamphlet form, but we are very glad to welcome them again between book covers in company with shorter papers, equally able to uphold the cause of science against the attacks of ignorance or malevolence. In this book we renew acquaintance with Lord Justice FLETCHER MOULTON'S evidence before the Royal Commission on Vivisection, that impartial and masterly justification of experimental medicine, in every word of which there sounds the voice of the judge and never of the advocate. The reading of it leaves but one regret, that the bench which has claimed the man who gave that evidence has not been the bench of a laboratory, for science might have looked for distinguished services from Lord Justice FLETCHER MOULTON, though in saying so we do not forget that his examination of the methods of experimental research gains added authority from his detached position and his expert knowledge of evidence. Sir DAVID BRUCE'S paper on the Extinction of Malta Fever affords, perhaps, the most complete concrete instance of the triumph of experimental science over a specific and widespread disease for which prolonged observation had failed to suggest a remedy, although Dr. LOUIS CORTAULD'S paper on the Antitoxin Treatment of Diphtheria presses hard on its claims. A paper by Professor E. H. STARLING on the Use of Dogs in Experiments contains this significant assertion: "Though I have been engaged in the experimental pursuit of pathology for the last 17 years, I can say that on no occasion have I ever seen pain inflicted on a dog or cat in a physiological laboratory in this country, and my testimony would be borne out by anyone engaged in experimental work in this country." Be i remembered that Professor STARLING'S good faith in this matter has been tested and found whole by the substantiated verdict of a British jury, a tribunal not too sympathetic to science in the main and not apt to listen unmoved to a well-founded cry of cruelty.

Of the remaining excellent papers we will mention only Professor A. R. CUSHNY'S convincing demonstration that experimental pharmacology affords the one safe guide in therapeutic practice. Let one quotation suffice. "Digitalis is said, in 1860, to slow and weaken the heart, and the conclusion is drawn that it is useful in aneurism and other similar vascular enlargements, in apoplexy, and in acute fevers. This was the result of 75 years of clinical observation. Within a few years TRAUBE and BRUNTON showed by experimental methods that one effect of digitalis is to raise the blood pressure in a remarkable degree, exactly the worst treatment possible in apoplexy and aneurism." This is the sort of stuff needed to convince

[1] Publications of the Research Defence Society, March, 1908—March, 1909. London: Macmillan and Co. Pp. 216. Price 2s. 6d. (or to members at cost price, 1s. 8d. post free, from the secretary, 70, Harley-street, W.). Four pamphlets included in this volume, and which were not circulated with the set of pamphlets sent to members of the society last summer, will be sent shortly to every member.

those waverers who are not wilfully deaf to reason. And in the book will be found much other argument in proof of the supreme necessity of experiment to the fruitfulness of science, besides a plain and categorical statement of the small degree of suffering inflicted yearly in this country in return for a mighty amount of present good and future hope.

Annotations.

"Ne quid nimis."

INCORRECT REGISTRATION OF BIRTHS.

THE Notification of Births Act, 1907, is a measure which has met with a considerable amount of criticism and hostility in certain directions. The professional grounds for this opposition are very just, but we must not for that reason decline to see that the Act itself may be the means of leading to more correct notification of the precise date of birth than has been the case hitherto. Mr. F. W. Alexander, medical officer of health of the borough of Poplar, has recently drawn the attention of the borough council to the anomalous state of affairs which now obtains. It is enacted by Section 1 (4) of the measure in question that the registrar of births and deaths shall at all times have access to the notices of births received by the medical officer of health, and by Section 2 (5) the medical officer of health of every metropolitan borough in which the Act is in force must send to the London County Council a list of all notices of births received by him during the week. Now the public health department of Poplar, with the view of facilitating matters, sends every week a copy of the weekly list to the registrars of births and deaths, and every week the registrars themselves forward to the public health department a return of births registered by them. It is found that when the registrars' returns are received the children are for the most part more than six weeks old; and it has been discovered, on comparing the registrars' returns with the notifications received by the medical officer of health, that the date of birth as given in the former differs from that recorded in the latter, and Mr. Alexander furnishes several illustrative instances. The explanation of this curious anomaly is that the parent, having omitted to notify to the registrar the birth of a child within six weeks, post-dates the birth in order to bring it within the prescribed limit and thus avoid the penalty. Sometimes the registrar is able to persuade the parents to admit the true date of birth—i.e., that notified to the medical officer of health within 36 hours of birth, but not infrequently the parent adheres to the date furnished to the registrar, in which case the registrar has no alternative but to accept it. It ought not to be difficult to remedy these defects by means of a few prosecutions, if necessary, as it should be an easy matter to determine the precise date of birth. The Registrar-General has, we believe, been informed of the fact, and he will doubtless take some steps in the matter. Mr. Alexander also suspects that all the births taking place in the borough are not notified, although the fact of the adoption has been duly advertised.

THE BAKKOLA "CURE" FOR CANCER.

A CORRESPONDENT has forwarded to us a specimen of a fungus which grows on birch trees in Finland. It is called "bakkola" and is used in the form of a decoction in cases of cancer, and has, he says, a great reputation in Finland as a successful "cure." The remarkable point about this fungus is that, according to our examination, it yields to alcohol an intensely yellow substance, the tint recalling that of picric acid. Tests for alkaloids gave negative results, and from the general behaviour of the colouring matter with chemical reagents it would appear to be related to chrysophanic acid or chrysarobin. Chrysophanic acid is occasionally employed in the treatment of skin diseases, for example, psoriasis and chronic eczema, but is not so commonly used as chrysarobin, a substance closely allied to it. Chrysarobin is a neutral principle extracted from goa powder, a substance found deposited in the wood of Vouacapoua araroba, a tree common in the damp forests of Brazil. The araroba is contained in the clefts or cavities which traverse the wood in the direction of the diameter and are prolonged through the entire trunk. According to the National Standard Dispensatory it is deposited as an antiseptic preservative provision by the plant. The active yellow principle is seldom employed internally, but is given in psoriasis in half grain doses. Larger quantities produce irritation in the gastro-intestinal tract, increasing the flow of bile, producing copious watery stools, nausea, and vomiting. It is added that the local application of chrysarobin is not uncommon and has met with some success in the treatment of psoriasis and other chronic affections of the skin. Unless care is exercised, however, in regard to its employment it may cause pain, swelling, and inflammation in the tissue. These observations are of interest in connexion with the "bakkola cure" for cancer, since apparently this fungus yields a substance showing chemical properties more or less of the same kind as those exhibited by chrysarobin.

EXTRACTION OF CATARACT IN THE CAPSULE.

EXTRACTION of cataract in the capsule is no new operation. It has long been performed in certain complicated conditions and has formerly been advocated as a method to be employed in the routine treatment of senile cataract. During the last few years its strenuous advocacy by Major Henry Smith, I.M.S., of Jullundur, has revived the interest in the method. His enormous experience and the brilliant results which have attended his practice have led many ophthalmic surgeons tentatively to reconsider the subject and again to apply a procedure which past experience had discounted for general routine, thus confirming views founded upon theoretical considerations. These investigations and the renewed acquaintance with the difficulties and dangers of the operation have led surgeons, many of them masters trained in the same field as Major Smith himself, to extend only a qualified approbation. None have attained the success which his alluring statistics hold out. Indeed, when success is obtained in over 99 per cent. of cases, as according to Lieutenant-Colonel D. F. Keegan in his paper on the Charitable Dispensaries in the Punjab (on p. 1267 of the present issue of THE LANCET) Major Smith claims, the question instinctively arises, "What is the criterion of success?" It is notorious that in India it is impossible to follow up cases for any considerable length of time. Even though the immediate result of an operation be gratifying, what is the ultimate fate of the case? Setting aside actual loss of vitreous during the operation—so rare in Major Smith's practice as to excite surprise in the mind of the experienced ophthalmic surgeon when he contemplates the risks of the procedure—there must be considerable disturbance of the vitreous, which is likely to lead to remote changes seriously endangering vision. Moreover, the class of patient with whom Major Smith has to deal differs essentially from that found in other parts of India or in Europe. So many factors of this nature have to be taken into account that any general rule founded upon Major Smith's work may in the long run prove fallacious. We confess that we do not feel justified in

emulating Lieutenant-Colonel Keegan's enthusiastic appreciation of extraction of cataract in the capsule. That Major Smith is to be warmly congratulated on his results scarcely requires to be mentioned; that he is doing good service in expounding the advantages which he anticipates from a renewed and invigorated knowledge of an operation which has perhaps been unduly neglected we willingly admit. None the less, great as has been his experience, it must be remembered that it has been acquired in a limited field, and ophthalmic surgeons will be wise in proceeding cautiously before committing themselves to unqualified acceptance of his conclusions in their entirety.

BACTERIAL BAIT.

MICROSCOPIC as bacteria are they have their needs, which in some instances bear an analogy to those exhibited by the human race. It is possible, indeed, to separate certain kinds of bacteria from other kinds by a process of allurement, employing baits for the purpose. Those bacteria, for example, which are concerned in the process of putrefaction may be trapped or separated from the rest by offering them oxygen. A very pretty experiment in this direction consists in employing a thread of a green alga, which under the influence of the sun's rays evolves oxygen, and placing it in a drop of liquid infested with the particular bacteria. The oxygen-loving bacteria will soon gather round the points at which oxygen is evolved, just as so many fishes will be found gathered round a baiting ground. It is clear from this experiment that in the presence of both kinds of organisms, one to whom oxygen is distasteful and the other to whom it is a vital element, a means of separation is afforded. Oxygen, however, is not the only bait which can be used for the purpose of sorting bacteria. Many organisms, for example, are allured by the salts of potassium, while others find asparagin or the sap or juice of raw potatoes irresistible. This method, of course, is the principle of differentiation by which a culture of a definite composition is prepared suited to the needs of a given organism. It applies equally to the pathogenic organism as to the non-pathogenic organism, and has obvious bearings, therefore, upon the interesting but complex problem of the resistance of the human organism to disease.

PLAGUE IN RATS AT A BRITISH PORT.

ENGLAND'S world-wide communications by shipping with foreign countries expose her almost continuously to the risks of importation of exotic infection. To the port medical officer of health and his staff is intrusted the duty in this country of keeping a strict watch against the danger of invasion of our shores by cholera or plague. Occasionally the invader breaks through the first line of defence, but not often. Last year we had to report a small outbreak of plague at the port of Liverpool, comprising three cases on board a barge, but, fortunately, through the exertions of Dr. E. W. Hope, the medical officer of health, the infection was quickly destroyed and no extension took place. And now we have to mention a similar small outbreak, this time among dock rats at the port of Hull. From a printed report recently presented to the port sanitary authority by Dr. J. Wright Mason, the medical officer of health, we learn that some time in February last some dead rats were discovered in a dock shed among sacks of maize which had been landed last October from a steamship coming from a Black Sea port. These rats when found showed no signs of decomposition, and, indeed, had still fleas upon them, a sign that they had not long been dead. They were at once carefully examined in the laboratory by Dr. A. G. P. Thomson, the assistant medical officer of health, and the opinion was formed that these rodents had died from plague. This diagnosis was confirmed by Dr. Klein, to whom specimen rats had been sent. As soon as the provisional diagnosis of plague had been arrived at, Dr. Mason took active steps to ascertain the full extent of the mischief, and for this purpose search was made for dead rats throughout the other sheds in the docks; a large number of living rats were also caught and examined in the laboratory. But neither signs of undue mortality among rodents in any part of the docks, nor any infected animals, could be found. It was evident, therefore, that the infection had been limited to the particular dock shed in which the dead rats had been discovered. Rat-catchers were engaged to trap and destroy all rats in and around this shed, which was then thoroughly cleansed and disinfected. All sacks and articles likely to have been contaminated by the rats were burnt, and all persons who had been employed in the shed were medically examined and kept under supervision for three weeks. These measures and others which were carried out under Dr. Mason's direction, and with the loyal coöperation of the dock company, were entirely successful in suppressing the outbreak. As two months have now elapsed since any plague-infected rats were discovered, and as no trace has been found of infection among any of the large number of living rats which have been caught and examined during that period, it may be safely concluded that the danger is past. We congratulate Dr. Mason upon the success which has followed his well-directed measures, these having apparently freed the port of Hull from a threatened and serious danger

THE ARRANGEMENTS FOR EXCURSIONS AT THE CLOSE OF THE SIXTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE detailed arrangements for the Sixteenth International Congress of Medicine have now been issued, with a list of the committees and a programme of the communications accepted by the several sections. The meetings of the Congress will be held in the buildings of the former Polytechnic School, Museum-korut 6/8, and the formal opening will take place in the banqueting hall of the municipal Redoute at 11 A.M. on Sunday, August 29th, 1909. The closing ceremony will occur at the same place on Sept. 4th, at 10 A.M. Six plenary sittings will be held during the Congress, at which addresses will be delivered by Professor Baccelli of Rome, Dr. E. F. Bashford of London, Professor Kütner of Berlin, Dr. Laveran of Paris, and Mr. J. Loëb of Berkeley, U.S.A. A journal will be issued daily and there will be the usual secretarial offices and bureaus. Three new subsections have been formed—viz., orthopædics, professional hygiene, and school hygiene. We described last week the arrangements for lodgings, but the general secretary desires special attention to be called to the difficulty in finding adequate accommodation which intending visitors to Budapest will experience unless they give timely notice to "The Central Travelling Ticket Office iv Vigado-ter 1. Budapest, Hungary," and secure rooms by paying for them in advance. Certain concessions will be allowed by the railway companies to members attending the Congress. In Hungary the railways allow a reduction of 50 per cent. In France the management of the State railways and the East, North, and Orleans Companies also allow a 50 per cent. reduction to members provided with the proper vouchers, whilst in England the Great Eastern Railway grants a reduction to Congress members. Members of the Congress who have paid their subscriptions will receive a circular about the end of May informing them of the method to adopt in claiming these reductions. The executive committee has arranged six excursions for members after the conclusion of the Congress. Each excursion will

be "personally conducted" upon the usual inclusive terms, those who pay "first-class prices" will be entitled to a single bedroom in hotels, whilst those who pay "second-class" prices will be lodged in couples. All the excursions will start on Sept. 4th. The first will cost 150 crowns first-class and 135 crowns second-class, a crown being equivalent practically to 1*s*. It includes a visit to Kolozsvar, the ancient capital of Transylvania, the Marosujvár salt mines, and the Rév Pass. Members will return on Sept. 7th. Excursion 2 is to the High Tátra, Dobsina ice cavern, and Pöstyén baths, returning on Sept. 9th. Price 180 crowns first class, 150 crowns second class. Excursion 3 is to Lake Balaton, which is one of the largest and most beautiful pieces of inland water in Europe. Members will return on Sept. 6th. Price 130 crowns first class, 110 crowns second class. Excursion 4. The Lower Danube and Herkulesfürdö, returning Sept. 8th. Price 185 crowns first class and 155 crowns second class. Excursion 5. To Constantinople, returning Sept. 13th. Price 475 crowns first class and 375 crowns second class. This excursion will require passports *viséd* at the Turkish and Roumanian consulates. It will allow of five days in Constantinople. The excursionists having visited Constantinople may return *viâ* Trieste by putting into Athens and Corfu, the additional price being 425 crowns. Constantinople will be left on Sept. 11th and Trieste is reached on Sept. 16th. We should presume that this excursion will be modified if no improvement occurs in the political situation in Constantinople before the beginning of September. Excursion 6. To Bosnia, Herzegovina, Dalmatia, and the Hungarian Littoral, returning on Sept. 13th. Price, first class 320 crowns, second class 270 crowns. The latest date of entry for any of the excursions will be August 1st, and in each case a booking fee varying from 25 to 50 crowns, which is not repayable in any circumstances, must be paid. Some of the excursions are necessarily limited in number, so that early application is desirable. So far as can be told at present the Congress appears to be viewed with favour by the medical men of the United Kingdom, for it has secured a larger number of adherents than any International Congress of Medicine since that held in Paris.

THE CLAIMS OF HOME HEALTH RESORTS.

IT is satisfactory to see signs from those who are responsible for the administration of our home health resorts of an increasing zeal to bring before the public the advantages and claims of such places, while at the same time a determined effort is taken to render them more attractive not only in regard to social amusements but in regard also to the attainment of a high standard of sanitary control. Our remarks are prompted by the formation some few years ago at Margate of a chamber of commerce, the objects of which are "to promote, advance, and protect the commercial and general interests of the port and borough; to assist in the development and improvement of the town, and to add to its attractions as an all-the-year-round health resort." This organisation has already borne fruit in favour of the interests of the borough, and it has also served to forward the work of sanitary administration. Margate now possesses a very excellent water-supply derived from the chalk hills lying towards Canterbury, and the disposal of its sewage out to sea is based on methods approved by the highest authorities on sanitary engineering. The air of Margate is, of course, greatly celebrated for its salubrity and wonderful restorative powers. On the occasion of the third annual banquet of this chamber of commerce, which was held on April 26th, the members of the organisation were able again to report progress, a fact which Lord Brassey, Lord Warden of the Cinque Ports, who was present, heartily congratulated them upon. This organisation also causes its lay members to realise the importance and the arduousness of sanitary administration, and they come to watch its application and progress with great interest and to record the results with pride. They also enter into negotiations with the railway companies with the view of inducing them to increase the facilities for enabling the public to reach the place quickly, comfortably, and at reasonable rates. There can be little doubt that as the efficiency of such a scheme of organisation increases so will the patronage of the public increase, and a great portion of it will be weaned from the often erroneous idea that only a foreign health resort can meet their case. We should like, therefore, to see the excellent example of Margate in this matter followed by other health resorts.

THE TREATMENT OF DEEP-SEATED MALIGNANT DISEASE BY THE X RAYS.

THE value of the x rays in superficial carcinomata is well established, but their value in deep-seated malignant disease is doubtful. In the *American Journal of the Medical Sciences* for April Dr. G. F. Pfahler has published an important paper based on the treatment of 35 sarcomata and 304 deep-seated carcinomata. He classes as deep-seated, growths in the subcutaneous, glandular, visceral, and osseous tissues. Most of the cases were recurrent or very advanced and beyond other modes of treatment. His results are encouraging, considering the hopeless character of the cases. In over 50 per cent. of sarcomata he obtained recoveries. The following are some examples. A girl, aged 16 years, had a small round-cell sarcoma of the orbit and was not expected to live a fortnight. She recovered after three months' treatment without damage to the eye. She remained well for four months and then rapid recurrence took place and proved fatal. A man, aged 21 years, had a round-cell sarcoma at the angle of the jaw which grew to the size of an apple in four weeks and was then excised. It recurred and again grew to the same size in four weeks and was again excised. On the fifth day after the second operation it had recurred and was of the size of half a hen's egg. Twenty-two applications of the x rays were made in five weeks and recovery took place. He is now well, three years later. A woman, aged 30 years, was seen in September, 1904. She had a round-cell sarcoma of the frontal, ethmoid, and maxillary sinuses. This was proved by examination of a section of the growth by a pathologist. 416 applications of the x rays were made. The tumour almost disappeared and after two months she returned to her occupation as milliner. She has been quite comfortable for four years. A man, aged 36 years, had recurrence in the wound left after removal of a sarcomatous testicle and a secondary growth in the left groin of the size of a hen's egg. Both growths disappeared in four months after 44 applications. He is still well, six months after the last application. Of the 35 cases of sarcoma the patients are still under treatment in nine and have shown distinct improvement. Of the 26 cases in which the treatment has been discontinued eight of the patients died and 17 recovered or, at least, have been relieved of all symptoms. Of the 17 cases of recovery recurrence took place in two. One of these was fatal and in the other recovery has nearly taken place. Considering that practically all the cases were hopeless the results are remarkable. But Dr. Pfahler does not consider his results an argument against operation. On the contrary, he believes that the best results will be obtained by operation, followed by x ray treatment. With regard to the type of sarcoma the best results were obtained in round-cell sarcoma, then in mixed-cell sarcoma, and then in spindle-cell sarcoma. Three cases of melanotic sarcoma were treated and recovery took place in all. The results

in carcinoma were much less encouraging. They are difficult to summarise, as all the patients referred to Dr. Pfahler, some of whom were in a dying state, were treated. Only a few cases of primary carcinoma of the breast were treated and these were inoperable. The results were "as good as those obtained by other methods." In recurrent carcinoma of the breast brilliant results were obtained when the growth was localised. On the other hand, when it was extensive and metastasis had taken place (the majority of cases), only palliation and prolongation of life were, as a rule, obtained. In nearly all cases the tumours underwent some diminution and the patient was made comfortable. In advanced cases remarkable results sometimes were obtained. Thus a woman had two nodules in the scar left after removal of the breast and enlarged supraclavicular glands. After 44 applications in three months she recovered. The glands again enlarged and recovery again took place under the treatment. She is now living five years later. In four cases of carcinoma of the œsophagus improvement was obtained, the power to swallow solid food being restored. In ten cases of advanced carcinoma of the stomach some improved and one patient seemed to recover. In cancer of the rectum good results were obtained from post-operative x ray treatment; life was prolonged for a year or more and the patients were rendered more comfortable. 14 cases of inoperable cancer of the uterus were treated and two of the patients seemed to recover. Pain and discharge were often relieved for a time.

A NEW SEAL OF A ROMAN OCULIST.

IN 1907 the Cabinet des Médailles in Paris, through the generous donation of Commandant Mowat, became possessed of his valuable collection of nine Gallo-Roman oculist seals; this brought up the number of these relics in the Bibliothèque Nationale to 24. Early in 1908 M. Babelon, director of the Département Numismatique, was fortunately able to add another perfectly preserved medical signet, which had been found with a few other small antiquities in the garden of a resident at Langres. The seal is of flat shape, similar to a small dog biscuit, and has its inscription graven upon all four of its edges. It is cut from a piece of pale green steatite and this displays the letters quite clearly. The text is as follows, filling in the abbreviations:—

Lucii Pamii Hygini ad asprituđinem crocodes.
" " " ad omnem lippituđinem.
" " " ad sedatam diasmyrnes.
" " " ad caliginem.

The name of L. Pamius Hyginus is new, not only as far as concerns the cognomena of the old oculists, but also to the large Latin onomasticon. The collyria he employed and the complaints which by their aid he endeavoured to cure are all such as have been found mentioned upon previously known seals, and have been referred to in our columns in recent years. It is worthy of note that the arrangement of the wording is unusual, for instead of, as was commonly done, placing the collyria in each case, first followed by the word "ad," preceding the malady, the order is reversed. In the last line caligo, that is defective, or fading, vision is mentioned but no special curative ingredient given, so for its improvement the oculist appears to have relied upon his general ability. It is not probable that the diasmyrnes, or myrrh, was also intended for the treatment of caligo, because in no other oculist seal, and it is frequently mentioned thereon, is its use suggested for the purpose. In commenting upon this seal, commencing with the collyria, crocodes or saffron was a favourite remedy among the oculists, as in this instance, for "asprituđo," the palpebral granulations of trachoma. Diasmyrnes was the common ingredient for these collyria, and it has been mentioned upon nearly half of the 225 seals hitherto edited. In most cases it is stated to be useful for the cure of "lippituđo," or suppurative conjunctivitis. Here, however, the mention of the disease is qualified by the word "sedatam," indicating that its virulence was abating when Hyginus deemed the application of myrrh would prove beneficial. This qualifying term has only twice before appeared upon these seals. Upon one the text reads, "ad sedatas lippitudines," whilst upon the other "ad sedat(iones)" occurs. These oculists' seals are relics of which it is quite easy to make plaster-cast replicas, and it would be interesting if the museums of different countries would exchange casts of the respective seals in their keeping.

A PHYSIOLOGIST AS ARTIST.

Dr. Leonard Hill, who besides being an accomplished physiologist is a representative of the Faculty of Medicine of the University of London on the Senate of that body, finds time among his multifarious occupations to paint pictures, an exhibition of which is now being held at the Corner Gallery, 49, Old Bond-street, W. From a leaflet which is inserted in the catalogue we learn that, "In painting he paints to please himself, and delights in trying to catch some feeling of the light, atmosphere, and colour of landscape, and the expression of the animals he keeps at his house at Loughton." The pictures are deliberately rough, but they succeed in the points to which attention is thus drawn. For instance, Nos. 17 and 18, "The Tree Clump by the Sea" and "Autumnal Evening," well express a cool misty atmosphere, while No. 7, entitled "Vanquished," depicting a depressed-looking cock, should stimulate the artist to give his unhappy subject a dose of oxygen, make him try again, and then paint another picture and call it "Victor." The little exhibition shows Dr. Hill's versatility and artistic accomplishment in a marked manner.

FATAL ELECTRIC SHOCK IN TURNING ON THE ELECTRIC LIGHT.

IN the *Boston Medical and Surgical Journal* of Feb. 25th Dr. F. E. Jones has reported the following case. A strong man, aged 21 years, worked at a forge in a machine shop. Over the forge hung a 16 candle-power incandescent electric lamp. He reached for the lamp apparently to turn on the light and cried out. His fellow workmen rushed to him and found him rigid, leaning against an adjacent wooden partition, and tightly clutching the lamp with his right hand. On breaking the contact with the lamp he fell to the floor. Efforts to resuscitate him by artificial respiration failed. All the middle joints on the back of the right hand were burned and the bone was laid bare. The lamp was hung on cords from the rafters, where its wires tapped the main wires of the building, which carried 110 volts of electricity. Careful examination failed to reveal anything out of order in the electric supply of the building; the fuses were in place at the entrance of the wires and in each lamp. In the vicinity of the building were wires carrying a much higher voltage (2300 volts) from the generating station to transformers, which reduced the voltage in the secondary currents supplied to the houses to 110. The wires from the building led to a transformer several hundred yards distant. A current of 110 volts is ordinarily used for electric lights and is quite safe to handle; it may pass through the body without causing anything alarming. The fatal shock must have resulted in some way from the primary current of 2300 volts escaping to the wires of the lamp. An electrical expert explained the accident as follows. By various means, for example, by the limbs of trees rubbing against the wire of the primary current, an opportunity may be given for escape to earth. This, however, may not occur unless a second mode of escape is possible. Then a short circuit is formed through earth from one point of escape to

the other, as it offers the least resistance to the current. In this case probably one leak occurred somewhere in the primary circuit as a result of a tree rubbing against the wire. The current was then, so to speak, waiting for another leak to earth. The coils in the transformer, in consequence of poor insulation or other cause, may have allowed the primary current to escape on to the secondary wire. When the man seized the lamp he formed the second connexion with earth and the primary current of 2300 volts passed through him. In THE LANCET of Jan. 26th, 1907, p. 246, we referred to a similar accident which also occurred in America. A man received a fatal shock while using the telephone and holding an electric lamp. This was attributed to the main electric and telephone wires having been swayed together by the wind where they crossed, the insulation being burnt off, and a current of 3500 volts passing into the telephone wire. In the system of electric lighting now installed in Boston a device is adopted to prevent such accidents. The secondary wire is connected with earth at the transformer. If any of the primary current escapes to the secondary wire it therefore at once goes to earth.

RAILWAY HYGIENE.

"THE exceptionally severe incidence of influenza among the travelling public in Italy," writes an Italian correspondent, "has prompted Dr. Carlo Giongo, the well-known 'chimico igienista' (sanitary chemist) to inquire into its causes, and one of these he finds in the conditions worse than 'untidy,' nay, positively filthy, in which the said public are conveyed over the railway lines. It is no disparagement of Dr. Giongo's conclusions to state that these had been anticipated nearly half a century ago by THE LANCET'S Special Commission [1] on the sanitary risks attending railway travel in the British Isles—a Commission whose authority so impressed the travelling world that the railway companies lost no time in acting on the suggestions indicated, and, in quite a proper spirit, consulting the interests of the passenger coincidently with their own. The result has been that with few, if any, exceptions the British lines maintain an honourable lead over their Continental sisters in all that pertains to the observance of hygienic law and social amenity—a lead which, the *Gazzetta del Popolo* of Turin remarks, is best appreciated by a comparison of the Italian railways with those of the conterminous states and of these in turn with those of the British Isles. It is customary in Italy, continues the Subalpine journal, to bewail the 'disservizio' (perfunctory service) of her railways, but the evils denounced by Dr. Giongo are quite other than those connected with the time-table. Nay, they are quite as real, though not so gruesomely impressive, as those of the all too frequent 'derailments' or 'collisions' occasioned by an undermanned, underpaid, and overworked *personnel*. That '*ensemble* of "sudiceria volgare" (common filth) which seems to cling to the railway carriages of all three classes,' says Dr. Giongo, 'forms a kind of El Dorado for countless bacilli, which enjoy a "free pass" over all the Italian lines from the Alps to Etna.' Among those bacilli he places first that of influenza—that of tuberculosis coming next as 'a good second.' Having illustrated this by bacteriological considerations, he proceeds in his monograph (published in the principal weekly journal of Italy, the *Marzocco* of Florence) to insist on the appropriate remedy, which is shortly this—a thorough systematic cleansing process applied on a scale and with a vigilance long practised in the British Isles, coupled with apparatus for arresting the diffusion of dust and for disinfecting every compartment on the arrival of each train at its terminus. Descending to details, he urges the frequent change and 'sterilisation' of the cushions, particularly where the head is apt to recline. This recommendation he might have reinforced by citing the remarks made in its support by THE LANCET Commission, prominent among them being the rise of temperature in heated carriages the windows of which (too frequently in continental experience) are hermetically sealed, and the consequent liberation from the cushions or woollen paddings of effluvia absorbed from successive relays of passengers with whom personal ablution or abstersion is not a persistent habit! Dr. Giongo's appeal to the State (which in Italy is now vested with control of the railways) ought to be driven home by the Association for Promoting the Influx of Visitors into Italy—an 'association' which includes (besides members of both Houses of Parliament) many representatives of the banking, industrial, and hotel-keeping interests, and which might appropriately follow up the reforms it has already wrought in the houses of entertainment, urban and provincial, by measures for safeguarding the health of the traveller, seriously endangered as that has lately been by the insanitary conditions prevalent on the main Italian lines."

[1] THE LANCET, January and February, 1862.

A TELEGRAM from the Governor of Hong-Kong to the Secretary of State for the Colonies states that five cases of plague were reported during the week ending April 24th, the number of deaths being three. Another telegram received at the Colonial Office from the Governor of Mauritius states that three cases of plague were reported during the week ending April 22nd, the number of deaths being three.

A SPECIAL meeting of the Dermatological Section of the Royal Society of Medicine will be held at 20, Hanover-square, London, W., on May 20th, at 5 P.M., when Dr. Louis Wickham of the Radium Institute, Paris, will give a lecture-demonstration on the Therapeutics of Radium.

THE CHARITABLE DISPENSARIES IN THE PUNJAB.[1]

BY D. F. KEEGAN, F.R.C.S. ENG.,
BRIGADE-SURGEON-LIEUTENANT-COLONEL, I.M.S. (RETIRED).

MAY I be allowed to direct attention to Colonel Bate's report on the working of the charitable dispensaries in the Punjab in connexion with the annotation entitled "The Medical Factor in our Tenure of India"[2]? This report presents some features of great interest and deserves more than a passing notice. The aspiring specialist in ophthalmic and genito-urinary surgery in the British Isles who dips into its pages will with difficulty suppress a feeling of envy tinctured by sadness that his opportunities for rapidly acquiring manual proficiency in his own special sphere of surgery are so meagre in comparison with those of most civil surgeons whose lot is cast in the Punjab. For this report deals with 23,270 extractions of cataract, 3583 operations for artificial pupil, and 6782 operations for stone in the bladder. Irrespective, however, of the surgical inte of the report, there is a still larger and broader interest attached to it by reason of its review by the Lieutenant-Governor of the Punjab, Sir Louis Dane.

Directing our attention in the first instance to the operations for stone in the bladder, we find that out of a total of 6782 operations as many as 6034 were treated by the crushing method, with a mortality of only 2·62 per cent. To this percentage we must, however, add 1·2 per cent. for cases which appear in the columns of the report as "discharged" and "relieved" and therefore the percentage of unsuccessful results following on 6034 crushing operations amounted to

[1] The Triennial Report on the Working of the Charitable Dispensaries in the Punjab for the Years 1905, 1906, and 1907, by Colonel T. H. L. Bate, C.I.E., I.M.S., Inspector-General of Civil Hospitals, Punjab.
[2] THE LANCET, Jan. 30th, 1909, p. 334.

3·82. Half, or somewhat more than half, of these 6034 crushing operations were performed on very young boys and youths, and the remainder on males varying from 16 or 18 years of age to men of very advanced years. In many cases, both in early life and advanced age, the stones dealt with were of very considerable size. These results must be considered by all competent judges as being eminently satisfactory, and are conclusive evidence that there are many past-masters in the craft of crushing vesical calculi in the Punjab. Turning to the cutting operations, which embrace suprapubic, lateral perineal, median and vaginal lithotomies, we find that the death-rate following 683 operations amounted to 11·7 per cent., excluding unsuccessful cases appearing under the headings "discharged" and "relieved." The lateral perineal lithotomies amounted to 499 cases with 55 deaths—a mortality of 11·02 per cent.; and if the "discharged" and "relieved" cases are included, the percentage of unsuccessful results amounted to 14·22. The suprapubic lithotomies amounted to 130 cases with 21 deaths, a rate of mortality of 16·15, and if the "discharged" and "relieved" cases are included the unsuccessful results amounted to as much as 25·38 per cent. If the great majority of these 130 suprapubic lithotomies were undertaken for the cure of very large calculi then the results must be considered as satisfactory; but if they were undertaken for small calculi, and the report throws no light on this point, then the results must be considered as very unfavourable. In pleasing contrast with the results following the 130 suprapubic lithotomies, 50 perineal litholapaxies were performed with four deaths, a mortality of only 8 per cent. Perineal litholapaxy is only performed in the Punjab when the stone is so large or so hard that it cannot be dealt with by Bigelow's method of urethral litholapaxy. The results which followed these 50 perineal litholapaxies go to prove what most surgeons in India who have had a large experience in treating vesical calculi have for some years believed—viz., that perineal litholapaxy or perineal lithotrity is a far better operation for very large vesical calculi than suprapubic lithotomy. Dealing with the grand total of 6782 operations for vesical calculi, we find that the proportion of crushing to cutting operations was as 8·8 to 1, and the proportion of failures following the crushing method was as 3·82 to 15·92 after the cutting methods. Or in other words, litholapaxy was more than four times as successful as lithotomy. Some years ago, when the great success achieved by surgeons in India in performing litholapaxy had begun to attract the attention of the profession in England, it was conjectured that this success was due to the great tolerance of the Indian bladder to the manipulations of the lithotrite. I need hardly point out that the statistics just quoted completely dispel this cherished illusion of the unskilled lithotritist in this country. No. Litholapaxy has triumphed in India simply because surgeons practising in our great dependency enjoy unrivalled opportunities of rendering themselves practically familiar with the lithotrite and have learned by experience how to use it with precision and dexterity.

Coming to the cataract operations, they amounted, as already stated, to the large total of 23,270, and the percentage of good vision obtained was 93·42. This percentage of success may be considered fairly satisfactory when we bear in mind that the operations were performed by a number of surgeons of varying degrees of skill and experience in cataract extraction. In Jullundur, however, where Major Henry Smith, I.M.S., performs extraction in the capsule, the success obtained was over 99 per cent. Out of the total 23,270 Major Smith alone must have performed about 8000 operations, for in the year 1906 he did as many as 2974 extractions, and therefore the percentage of success obtained by the average operator in the Punjab fell considerably below 93·42. Extraction in the capsule has been practised in India for several years. Lieutenant-Colonel T. R. Mulroney, I.M.S., and his assistant, the late Rai Bahadur Mehr Chand, practised it systematically. For the last 15 years Lieutenant-Colonel G. H. D. Gimlette, I.M.S., has also performed it as a routine operation. But to Major Smith of Jullundur the great credit is due of developing the technique of the operation to a surprising pitch of excellence, and as readers of THE LANCET are aware his experience of cataract extractions now extends to 20,000 cases.[3] This, perhaps, is not the time to discuss the relative advantages of extracting cataracts in the capsule as compared with the method generally adopted when the capsule is incised. Ophthalmic surgeons in Great Britain and throughout Europe look askance at extraction in the capsule, and the three leading professors of ophthalmic surgery in India have steadily opposed it. But members of the Indian Medical Service, in charge of large civil medical institutions, have never been much influenced by professional dicta. They are very independent and go their own way when once they feel that they are on the right track. There is no getting away from the fact that extracting cataract in the capsule is the ideal operation if a surgeon can do it well. It is the operation which has been the dream of all enthusiastic ophthalmic surgeons the world over, but a dream so seldom realised. It has, however, been reserved for India to realise this dream, and the brilliant results which Major Smith has achieved for some years at Jullundur have stimulated some of the more progressive and junior members of the Indian Medical Service to repair to Jullundur and there to learn the technique of the operation under Major Smith's personal supervision, and there can be little doubt that in a few years the number of surgeons in the Indian Medical Service who will perform extraction in the capsule as the operation of election will rapidly increase. For immature cataracts, extraction in the capsule is the operation *par excellence*, and when well performed the after-treatment is extremely simple and satisfactory, and secondary operations are never required. When extraction in the capsule becomes a popular operation among ophthalmic surgeons in India a great boon will be conferred on natives of the country who are now obliged to waste long periods of time whilst waiting for their cataracts to ripen.

And now to pass from the strictly professional aspects of the report to subjects of administration. The Inspector-General of Civil Hospitals having drawn attention to the inadequate number of dispensaries in certain districts, the Lieutenant-Governor remarks:—

> It has, however, to be remembered that local bodies will probably never be able to provide medical assistance at every man's door, and the time has now come when, having set an example, Government and the local authorities may expect unofficial doctors to step in and fill up the gaps. They will at first need protection against the charitable competition of the public dispensaries, to which even the well-to-do resort unfairly for gratuitous medical relief, and still more a sympathetic backing from Government officials as a support to their prestige and reputation; but, given this assistance, there can be little doubt that the future extension of medical practice in rural tracts must be largely in the hands of the private practitioner.

These remarks are most important as heralding a wider sphere of activity for native medical practitioners educated at the expense of Government, and it is to be hoped that they may take them to heart and start practice on their own account, and so oust the native quacks who prey on the unsophisticated villager. It will be observed that the well-to-do native of India does not fall far behind his well-to-do brother in the West in approaching the out-patient department of hospitals *in formâ pauperis!*

Regarding the system of financing the medical institutions in the Punjab the Lieutenant-Governor's remarks are very weighty:—

> There are few charitable objects upon which money can be more profitably expended than the dispensaries, and the Lieutenant-Governor hopes that the Indian public will gradually come to realise this. Now that arrangements have been made for enabling subscribers to earmark their subscriptions for particular objects and particular dispensaries, each subscriber will be able to see for himself the good he is doing to his fellow men, and it may be that the personal pride in an institution which he has helped to develop will open the purse-strings of many who have hesitated to give what has hitherto been really a mere donation to the funds of the district board, a body to which no particular sentiment can attach. It is by private subscription that the better classes who use the dispensaries can show their gratitude for the benefits received. With regard to public funds, the Lieutenant-Governor has in a recent case expressed the opinion that a larger share of the financial resources of the province should in future be devoted to medical relief even, if necessary, at the expense of checking somewhat the rate of the progressive expenditure on higher education. If increased expenditure on any department is feasible, the medical department has the first claim.

Here we find enunciated by a Lieutenant-Governor for the first time, as far as I know, the wholesome doctrine that "immediate care of the body," charity, in fine, should take precedence of "higher education" in India. Writing about the dearth of small lithotrites in district dispensaries in India some nine years ago in the special Stone Number of the *Indian Medical Gazette* I remarked: "In the Punjab, Sind, the North-West Provinces, and in some districts of the Bombay Presidency where stone in the bladder is prevalent,

[3] THE LANCET, August 15th, 1908, p. 452.

the peasant in the fields has a right to look to Government that his son, when suffering from stone in the bladder, should have it extracted by a crushing and not by a cutting operation. It may be argued that the expense of furnishing branch dispensaries with complete sets of litholapaxy instruments would be a very heavy one. Doubtless it would be, but local governments could easily divert a small portion of their educational funds for such a charitable purpose. It is the peasant who pays all our salaries in India, and our pensions when we retire, and surely he has the first claim on our charity, and it seems hard that he should be obliged to toil in order that the rich *bunniah's* son may receive an education in high-flown English at his, the peasant's, expense."

The Mission Section of the Pan-Anglican Congress decided that "Strengthen, Reinforce the Medical Arm," is to be the watchword which should guide future Christianising efforts in India. The Government of India might well adopt the same motto and apply it to their own medical service in these days of unrest in their great dependency. There can be no clashing of interests between the Indian Medical Service and the Association of Medical Missionaries, for charity in its widest acceptation is the bed-rock principle of both. Members of the Indian Medical Service know full well what noble work the Medical Missionary Association, which now numbers more than 300 fully qualified medical practitioners of both sexes, has done for many years in India, and how much this charitable work has tended towards inducing the native to view the Great Sirkar with a more and more trustful and kindly eye. And the association has done this by the proficiency of its members in medicine and more especially in operative surgery. One member of the association living in a station on the bank of the Indus has done nearly a thousand operations for stone in the bladder during the last 15 years, and the aggregate number of important surgical operations performed in one year by the combined members of the association throughout the length and breadth of India is immense.

There are many ways of strengthening and reinforcing the Indian Medical Service even without adding to its numbers, which would, of course, entail a heavy expenditure of money in salaries and pensions. For instance, civil hospitals and dispensaries throughout India should be furnished with operating-rooms fully equipped in every particular to carry out aseptic surgery. To do this the sinews of war must be found, for modern surgery costs money. We have in India for some years lagged behind our surgical brethren in England and in Europe generally in the wide field of abdominal surgery through lack of suitably equipped operating-rooms. When these are supplied throughout India, Indian medical officers will be able to show as good results in abdominal surgery as they have done in the past in operations for cataract and stone in the bladder. The Inspector-General of Civil Hospitals, United Provinces, in his triennial report for the year ending 1907 writes *apropos* to an increase in the number of surgical operations:—

> The general advance is matter for congratulation. It is due in large measure, not only to the increasing confidence of the people and to the extended scope which medical officers enjoy under modern surgical procedure, but also to the stimulus which has been given to operative work by the improvement to operating-rooms and surgical equipment during the past few years. My predecessor, Colonel Joubert, commenced a campaign against obsolete instruments and obsolete methods which is now beginning to bear fruit, and I have done my best to continue the good work by building new operating-rooms and removing defects from old ones wherever it has been possible. There is hardly an operating-room in these Provinces which has not been either rebuilt or remodelled during the past three years or for which structural alterations have not been proposed. My work in this direction has unfortunately been stopped temporarily by the necessities of the existing famine and all projects are in abeyance. Operations are now possible in our larger hospitals which a few years ago were not undertaken at all or, if so, with the greatest apprehension. The triumphs of modern surgery can only be achieved by attention to that complete asepsis which can alone insure success, and which was impossible under the old conditions. Not only civil surgeons but assistant surgeons now undertake formidable abdominal and other operations with success which formerly were precluded on account of the dirty surroundings under which they had to be performed.

Better late than never. But it seems strange that the medical institutions in the United Provinces should have been obliged to wait so many years for adequately equipped operating rooms to carry out modern surgery which confers a priceless boon on the poor peasant, while large sums of money were being spent on "higher education," which can only benefit the well-to-do.

For centuries in India the itinerant coucher of lenses has been permitted to play havoc on the eyes of the simple villager afflicted with cataract, and the amount of irretrievable blindness which follows in the wake of these surgical quacks is immense. There are many members of the Indian Medical Service besides civil surgeons who are specialists in ophthalmology. If at certain seasons of the year these officers were deputed to travel through the country districts surrounding their military stations, and were supplied with tents and competent hospital assistants, ophthalmic surgery would be brought to the villages and the native coucher's occupation would be gone. The busy and hard-worked civil surgeon in the periodical inspections of his district branch dispensaries has not the time to carry out cataract operations efficiently, for he cannot do what the coucher does. He cannot decamp to a neighbouring village an hour or two after operating. He must look to the after-treatment of his cases, but there is not time to do this, and consequently the villager afflicted with cataract must come to the headquarters of the civil surgeon when he wants relief. But all who know India well are aware that though many villagers will travel hundreds of miles on foot to seek the skill of a renowned ophthalmic surgeon, many more are content to await the advent of the coucher and to trust to kismet.

In these days of unrest in India the native whom we should endeavour to influence and conciliate is the man in the field, not the voluble man in the street who wears patent-leather boots and is veneered with English. We want to influence for good the millions of patient, silent, hard-working villagers, the backbone of the country. Such men care little for Legislative Councils and Electoral Colleges. What they require is relief from suffering and bodily ailments and a just and sympathetic rule; and as long as we have them on our side we need not fear the future. The members of the Medical Missionary Association and the Indian Medical Service are potent instruments of conciliation between the governing Briton and the subject races in our great dependency; and no strangers in India know the native more intimately than they do, for it is their lot to watch and tend him when stricken by disease or accident. And it is then that his many fine qualities are best seen and recognised. And the doctors are amply rewarded by the gratitude and implicit trust reposed in them by the native. All this being so, one is tempted to ask, Was it expedient to issue within recent years rules and regulations regarding the acceptance of fees which have wounded the *amour propre* of a great medical service?

SANITATION IN INDIA.

III.[1]

Eastern Bengal and Assam.

THE annual sanitary report of the Province of Eastern Bengal and Assam for 1907 is furnished by Lieutenant-Colonel E. C. Hare, I.M.S., the Sanitary Commissioner of this province. We find that there was a marked absence of high floods and that the rainfall was practically deficient throughout the province in 1907, in contradistinction to the heavy floods that occurred in 1906. The provincial birth-rate was 37·01; this was lower than either the rate for 1906 (37·38) or the rate of the previous five years (39·31). The death-rate was 29·30, which was also lower than that for 1906 (31·67) and that of the last five years (32·19). The decrease in the mortality ratio amongst infants seems chiefly to have benefited those under one year of age. Males gave a greater mortality (30·23) than females (28·34), excepting young adult females, in whom the mortality was higher than among males. Lastly, as regards the mortality, the fall chiefly affected "other classes," the Hindus, and the Mohammadans only showing a slight decrease, whilst amongst the Buddhists there was a slight increase.

Respecting the chief diseases, the mortality from cholera gave a provincial death-rate equalling the mean of the past ten years (2·58), but the districts of Rajshahi, Bakarganj, and Noakhali suffered severely; the last two districts have the disease always more or less prevalent, as owing to their position in many parts it is extremely difficult to get water fit to drink. With respect to small-pox, the provincial mortality (0·29) was somewhat higher than that

[1] Nos. I. and II. were published in THE LANCET of April 10th (p. 1067) and 24th, 1909 (p. 1199), respectively.

of the previous decade (0·22). In the Kamrup district in the Assam valley the number of deaths reported was indeed higher than has ever been recorded. The prevalence of the disease is entirely due to the Mahapurushiyas, who have religious objections to vaccination. The civil surgeon, however, we are glad to see, reports that they seem to be yielding at length to the persuasions of Hospital Assistant Mahim Chandra Chatterji, and he produces some evidence showing that the endemic death-rate of the district is at last diminishing. In one district the increase was evidently due to the practice of inoculation; in two cases, however, the inoculators were prosecuted, in one of which conviction was obtained, so it may be hoped that this practice may finally cease. To show the different results that are obtained according as to whether common-sense principles are applied by inspectors and sub-inspectors, the Deputy Sanitary Commissioner remarks that it is not unusual to find vaccination proceeding enthusiastically at one end of a village, whilst small-pox is working havoc at the other end.

Fevers gave a considerable decrease in 1907, both in urban and rural areas—3·15 and 2·17 below the decennial mean rate. The influence of the surroundings is well shown in the Rajshahi district, where the mortality was due chiefly to the notoriously unhealthy subdivision of Nator (46·38) and the adjoining circle of Boalia (45·49). In it there is a large swamp known as the *Challan bil*. Proposals to drain this *bil* have been under consideration for many years, but expense has stood in the way of any active measures. Surely the local authorities ought to know that any initial expense would be amply compensated hereafter by the improved sanitary condition that would result. With respect to blackwater fever, a commission has been appointed by the Government of India to inquire into the cause of the disease, Captain S. R. Christophers, I.M.S., and Dr. Bentley being deputed to investigate the subject of the affection, which is causing much alarm amongst the planters of the Jalpaiguri Duars. No definite conclusions have yet been obtained, but evidently the disease is more common than was formerly suspected, and there are strong reasons to believe that it has a direct relationship with malaria. Kala azar showed 160 fewer deaths than in 1906, having caused 2227 deaths. It is very satisfactory to find that the civil surgeon of the Garo hills, formerly so severely affected, reports no cases. The Gauhati municipality, acting on the theory that the disease is communicated by the bed bug, has issued a pamphlet recommending the isolation of the infected and the keeping of houses and beds free from bugs. The Leishman-Donovan body was found in the blood of the spleen by the civil surgeon of Tipperah. Dysentery and diarrhœa showed a provincial death-rate (0·68) which was lower than those of the previous ten years (0·75). Eight cases of plague were reported. Captain C. A. Gourlay, I.M.S., the Deputy Sanitary Commissioner, made an interesting inquiry to ascertain the species of rats found in Dacca and Chittagong; his results showed that, contrary to Dr. Hossack's experience in Calcutta, *Mus rattus* predominated at Dacca and probably also at Chittagong, whilst the *Nerokia bengalensis*, which forms the majority of the rats in Calcutta, is not so prominent except in the neighbourhood of Chittagong Port, where its predominance is probably accounted for by the large number of granaries. Lastly, the *Mus decumanus*, which is essentially a sewer rat, is very scarce.

The report concludes with a statement showing the result of the year's work in the distribution of quinine. The system of introducing pice packets of the drug into Assam and the Surma Valley was commenced in 1905 and extended to the Eastern Bengal districts during the latter half of 1906. The year 1907 was therefore the first year for which a complete record of the sales throughout the province is available, and the results are interesting. The percentage of pice powders distributed to the population of the Eastern Bengal districts was 6·99, and the decennial ratio from fever was 24·88. The corresponding figures for the Assam district were 4·02 and 16·24. The total number of packages sold was 18,993. The largest number were bought in Bakarganj, where quinine has had for many years a great reputation. Next in order came the Khasia Hills, where the increase in sale is reported to have been entirely due to the influence of the civil surgeon. The tables furnished in the report show that, in many of the districts where the mortality from fever is very high, there is ample scope for the extension of sales. Thus Goalpara has a decennial mortality of 30·28 and a percentage of pice powder distribution of only 2·03. Contrast this with the corresponding figures of the Khasia and Jaintia Hills, 7·42 and 15·23 respectively. The Sanitary Commissioner has very rightly issued instructions to the civil surgeons of all districts, in which there are registering circles reporting a mortality of over 35 per 1000 from fevers, to take special steps to advertise and give facilities for the sale of the drug in the affected villages. The provincial post-master is taking great interest in the scheme, and has given much valuable aid in arranging that all post-masters shall annually send statements to the district civil surgeon of their probable requirements of quinine for the year, so that he can indent beforehand on the Calcutta depôt and thus obviate the risk of supplies falling short during the fever season. The civil surgeons have also been instructed not to allow their stock in hand to fall below a certain minimum sufficient to cover emergent expenditure. Not a detail seems to have been missed by the energetic Sanitary Commissioner; thus he has wisely paid much attention to the advertisements, so that they may be distributed with more purpose and system. Regarding the form in which the quinine is to be prescribed, several civil surgeons have recommended the use of sugar-coated tablets. The report closes with the usual appendices. It must, indeed, be a pleasure to work under so energetic an officer as Lieutenant-Colonel Hare.

Ceylon.

Sir Allan Perry, the principal civil medical officer and inspector-general of hospitals of Ceylon, submits the administrative report for 1907. During the year 130,403 births and 119,377 deaths were reported, the birth-rate being 32·8 per 1000 and the death-rate 30·1 per 1000, as against 35·7 and 34·3 in the previous year. The public health in 1907 showed a marked improvement on that of the previous year, which was one of the worst on record. There was an absence of widespread malaria, whilst the outbreaks of cholera and small-pox did not attain large proportions, there being only 105 cases of cholera and 126 of small-pox, as contrasted with 756 and 287 respectively in 1906. The Western Province was the healthiest during the year, whilst the North Central was the worst during the last three-quarters and the Province of Uva during the first quarter of the year. The infant mortality was highest in the first quarter. The total number of deaths for 1907 was 119,377, as against 136,271 in 1906, and of these deaths 54,964 were due to specific, febrile, or zymotic diseases, 4515 to parasitic diseases, 11,578 to constitutional diseases, and 31,555 to local diseases. There were no deaths from plague. During the year all Government hospitals and dispensaries were supplied with Lauder Brunton's pocket cases of permanganate of potash for the treatment of snake-bite, of which there were 174 deaths, as against 168 in 1906, the proportion of deaths being 1 in 22,919 and 1 in 23,720 respectively.

Coming now to the consideration of some of the principal diseases, malaria gave 484,898 cases, as against 700,541 treated in 1906. Speaking generally, the health of the public as regards malaria was good; the smaller number attacked was greatly marked in some parts of the Central and Lower Provinces, where last year epidemics had assumed alarming proportions and were responsible for much sickness and heavy death-rate. Only in the Northern Province were the numbers treated greater than in 1906, and the meteorological conditions were more favourable than in that year. In the jails, especially at Colombo, the cases of malarial fever were fewer than Sir Allan Perry has ever had cognisance of; here the prophylactic administration of quinine was rigidly carried out. The following were the preventive measures taken against the disease: 1. *Improvement in the sanitary surroundings* of dwellings, the filling up of hollows, and better drainage. Brushwood and low jungle were removed; pots and broken vessels likely to collect water were rendered innocuous. No works on any large scale were, however, carried out, but the latter are receiving the attention of His Excellency the Governor, who has a scheme for the gradual improvement of the sanitation of those parts of the island where malarial fevers are most prevalent. 2. *Education.* Thousands of pamphlets printed in the English, Cingalese, and Tamil languages have been widely distributed. In them the cause and prevention of malaria have been described in a simple, popular manner.

Popular lectures are also given by the provincial surgeons on their tours of inspection. The attendance on these lectures has been, on the whole, satisfactory, but the natives show a certain amount of scepticism, and especially do not understand why they should take medicine when they are well. 3. *Quinine distribution.* In 1906 paid distributers were employed to carry the remedy to the remote villages and small towns. This method did not answer the purpose very well: it was very expensive and unsatisfactory, there was no check over the amount of the drug distributed, and the distributers were suspected of selling the remedy to people actually suffering from fever, and in many cases of staying at home and filling up false lists of people who had been given quinine. Hence in 1907 these paid distributers were discontinued, and headmen and others holding respectable positions were supplied with quinine for distribution free to any persons applying for it. The arrangements described in the report for 1906 for the distribution of quinine amongst school children were continued in 1907 with gratifying results. The total amount of quinine issued from the civil medical stores was 76,206 ounces, which cost Rs.50,295.96.

Cholera gave 105 cases in 1907 with 62 deaths, one-seventh less than the numbers for 1906. The infection of most of the outbreaks was traced to India. Small-pox caused outbreaks in all the provinces except three. In the Western Province all the cases were traced to infection from Calcutta, Singapore, and Shanghai. The death-rates per cent. for the unvaccinated were 50, and for the vaccinated 15·1. Enteric fever from the statistics is on the increase, and the official figures shown ought to stimulate the carrying out of improved water- and milk-supplies and sanitation throughout the island. The death-rate is given as 22·55 per 100 cases treated. Regarding dysentery, there were 3474 cases treated at the various government hospitals, with 1264 deaths. In the jails for the whole island there were 328 cases, with 20 deaths, a death-rate of 6·06 per cent. Cholera belts or flannel shirts were issued to prisoners exposed to rain and cold. Dr. A. Castellani had good results following the administration of dysentery vaccine in chronic cases of bacterial dysentery. In the more acute forms of bacterial dysentery he has had success with the anti-dysenteric serum prepared at the Lister Institute.

Leprosy gave a total of 465 cases treated during the year; of these 79 were discharged and 66 died. Sir Allan Perry is strongly in favour of the establishment of a leper colony in the Eastern Province, where the patients could live the home-village life and cultivate the land, for, as he rightly says, the afflicted class is never happy in an "institution" like a hospital or asylum. The main things required would be a large area of ground and a fair water-supply; the buildings should be made of cadjans on wooden frames; there should not be more than four patients in a hut, and everybody who is able should work on the soil. The only permanent buildings would be the hospital, kitchens, and latrines. As regards the treatment of this disease, the director of the Bacteriological Institute made experiments during the year to obtain a leprosy vaccine, but having prepared such a vaccine its practical utility was not demonstrated. The most recent form of treatment, that of Professor Deycke of Constantinople, is about to be tried.

Respecting ankylostomiasis, there was an increased number of cases, which totalled 3831, the disease being constantly introduced by coolies from India. It is reported by the medical officers to be spreading amongst the natives, and this spread appears inevitable under the present conservancy arrangements regarding the disposal of sewage and in many cases as regards the water-supply. The death-rate in 1907 was 23·17, which is probably lower than the real death-rate, many cases being returned under the heading of malarial cachexia. The disease is most certainly increasing, as shown by the admissions into hospital, for in 1898 there were 1201 admissions, with 21·2 deaths. Each succeeding year the admissions and deaths have increased until, as has been noted above, there were 3831 cases, with 888 deaths. The disease is prevalent on the island wherever the immigrant Tamil coolie lives, whilst a large proportion of the coolies who arrive from India are already infected with this worm. If Ceylon is divided into the "dry" and "wet" zones they represent respectively those portions of the island slightly and markedly infected with ankylostomiasis. There are no sanitary measures in Ceylon for dealing with the disease; thus there is no sanitary accommodation on estates. In the treatment of the disease thymol is considered in Ceylon the best drug, although on Sir Patrick Manson's recommendation eucalyptus oil was given an extensive trial. Beta naphthol is preferred by some medical officers. All are agreed that a long course of iron tonics is necessary after the worms have been got rid of. Sir Allan Perry insists on the use of proper latrines and a pure water-supply: he holds that the hospital accommodation must be considerably increased and the staff strengthened, the people must be educated to observe cleanliness and taught the dangers of becoming infected with the disease. The public latrine accommodation must be increased, the drainage improved, and a pure water-supply be instituted. A conservancy scheme on sanitary lines should be introduced on all estates, whilst lastly Sir Allan Perry wisely points out that it would be possible to rid every immigrant of his worms on arrival if the planting community would bear the expense of his stay in the coolie camp, and the extra medical staff that would be required. It is earnestly to be hoped that the authorities concerned will fall in with these excellent recommendations.

Lastly, with regard to plague, we are glad to note that owing to the excellent precautions that have been in vogue for many years past against the introduction of the disease no case of plague was brought to Ceylon during 1907. The remainder of this report deals with the general sanitary condition of the colony and of the chief towns and the various provincial reports. From the above brief *résumé* it is evident that the sanitary supervision of the island is in most capable hands, and Ceylon is to be congratulated that the arrangements of its health are under the wise *régime* of Sir Allan Perry.

MEDICINE AND THE LAW.

The Responsibility of Medical Men in Examinations for Life Assurance.

AT the recent Glamorgan assizes, held on April 5th, two medical men appeared to answer to indictments preferred by the Colonial Mutual Life Assurance Society, Limited, charging them with obtaining from the society by false pretences certain sums of money, and with conspiring to obtain various policies of assurance. The money referred to consisted of fees of 10*s.* 6*d.* for examining and reporting upon persons to be insured, and the other charge implied that the defendants had combined with an agent of the society to defraud the society by helping to bring about the issue of policies which would have been refused if the society had had full information with regard to them. In both cases the magistrates had decline to commit for trial, the bench being equally divided in one, and the society had applied to be bound over under the Vexatious Indictments Act to prosecute at the assizes. When, however, the case was called on, counsel for the prosecution asked Mr. Justice Bray's permission to withdraw the prosecution, and this was accorded, his lordship intimating that from a perusal of the depositions he was satisfied that there had been no criminal intent on the part of the defendants, although there had been very great negligence. The evidence given before the magistrates showed that both defendants, when asked to do so by the local agent of the insurance company, had signed reports relating to the physical fitness for insurance of certain proposed lives without making any physical examination of the persons named in their reports. In the cases which formed the subject of inquiry the persons to be insured were not aware that policies upon their lives were being taken out, and one of them had died before the case came before the magistrates. The medical men had not intended to defraud; they were acquainted with the persons as to whose bodily health they deposed, and one of them, when he was before the magistrates, pointed out that if a woman as to whom he had signed a report and who had been his patient on past occasions, had been asked to allow an examination and had refused, he could have marked the papers "refused" and would then have been entitled to his fee of 10*s.* 6*d.* just the same. The prosecutions referred to have no doubt attracted the attention of life assurance companies

and of medical men who work for them in localities where policies for comparatively small amounts are taken out. On the one side, it may be pointed out to the companies that a thorough and careful examination, such as should be made where important pecuniary interests are involved, is not adequately rewarded by a fee of half a guinea, and that although they are entitled to expect a medical man to carry out what he undertakes, as a matter of business it cannot be to their interests to underpay him. On the other hand, a medical man should remember that a document to which he appends his signature is a statement to which that signature attests his full and unreserved assent. If he signs a document which declares that he has "this day carefully examined the proposed person," when in fact he has not done so, he places on record a statement which is untrue and for which he may at any time be made answerable. The fact that the fee which he is to be paid is not an adequate one is no excuse in such circumstances, though such a fee may be, and, in the interest of the medical profession, should be, refused.

Liability for Medical Fees.

A case of some interest to medical men as to their right to recover their fees from third parties came recently before the county court at Newport in the Isle of Wight. Mrs. Woodhall, of Roland-gardens, South Kensington, described as a lady of considerable means, was sued by a medical man for £37 for attendance on the defendant's sister. Whilst staying at Yarmouth, Isle of Wight, in September last, the defendant's sister (Miss Langton) was thrown out of a motor-car and sustained a broken leg. A medical man attended the lady, paying over 50 visits. From time to time defendant was consulted about the case. When the plaintiff sent in his bill the claim was repudiated. On behalf of the plaintiff it was argued that the defendant not only approved Roentgen ray treatment when it was recommended by the plaintiff, but paid for it. Counsel for the defendant suggested that the host of the young lady should pay, but his honour held that that was a very strong proposition. If hosts were to be held responsible in such circumstances it would do much to upset week-end visits, now so much in vogue. His honour gave judgment for the full amount claimed, with costs, holding that defendant had held herself out as responsible for the payment for her sister's medical attendance. Medicines and medical aid are necessaries for which an infant may contract and render himself liable, but a parent is not liable to pay for such necessaries furnished to an infant child without some proof of a contract on his part, either express or implied, and no such contract will be implied where the infant has been allowed a sufficiently reasonable sum for his expenses (Crantz *v.* Gill, 4 Esp. 471). Where a father of a family had several of his children living at a distance from his own house, under the protection of servants, it was held that if an accident happened to one of the children he was liable to pay for the medical attendance on such child, although he might not know the surgeon called in, and although the accident might have arisen from the carelessness of the servant (Cooper *v.* Phillips, 4 C. & P. 581). In dealings between medical men and the guardians of an infant it must be borne in mind that although the expenses of an extraordinary illness do not form part of the maintenance of an infant strictly speaking, yet where there has been no extraordinary illness physic and doctors' fees must be included in the general allowance for past maintenance, and the court will not allow the guardians to claim an extra sum for the same. A master is not bound to provide medical assistance for his servant, but the obligation (if any) must arise from contract; nor will such a contract be implied simply because the servant is living under the master's roof. In all cases where a servant falls ill and is unable to pay for medical assistance, the parish is bound to supply such assistance, although the servant may not have, previously to his illness, received or stood in need of parish relief (Newby *v.* Wiltshire, 2 Esp. 739). Where a servant, who hurt her foot in getting over a gate, called in a surgeon who was not the regular medical attendant of the family without being desired to do so by her master or mistress, it was held that her master was not liable to pay the surgeon's bill (Cooper *v.* Phillips, 4 C. & P. 581). A master is bound to provide an apprentice with proper medicines and medical attendance (R. *v.* Smith, 8 C. & P. 153). While a husband and wife are living together it is a presumption of fact that the wife is agent for, and has the authority of, her husband to pledge his credit for goods supplied to their establishment which are suited to her station. A wife has implied authority to bind her husband for reasonable expenses for medicines and medical attendances incurred during illness, but this implied authority is put an end to if the husband has given sufficient notice that he will no longer be responsible for any debts which she may incur. A medical man can recover professional charges according to a scale varying with the class of patients visited, provided that the same be fair and reasonable. In all professional dealings between medical men and their patients the customs of the profession will be considered as imported into the contract unless excluded expressly or by implication.

Prosecutions under the Factory and Workshop Act, 1901, in the City.

At the Guildhall recently summonses were heard by Alderman Sir Henry Knight against Messrs. Laurence and Co., blouse manufacturers in the City, for having employed four young persons under the age of 16 years for more than seven days without having obtained certificates in the prescribed form of their fitness for their employment. As a matter of fact, two of the girls had been employed for three months and the others for four and 11 months respectively without being examined by the certifying surgeon, so that the offence was hardly to be described as a technical one only, in spite of the fact that since attention had been called to the matter they had been examined and had been granted certificates. Sir Henry Knight, however, seems to have thought otherwise, for he is reported as having said that the matter was not very important and he inflicted a fine of 1*s.* only in each case, with costs. The following dialogue at the conclusion of the hearing is taken from the report in the *Daily Telegraph*:—

Sir H. Knight: What are the costs? I really cannot hear these ladies, they will not speak up. That one (indicating Miss A. M. Newton, the inspector of factories who appeared in support of the summonses), has been better since I cautioned her. (Laughter.) The Chief Clerk: The actual out-of-pocket expenses are 27*s.* Sir H. Knight: I shall not give her a half-penny more. (Laughter.) This is one of those harassing Acts of Parliament which are driving business out of the City altogether. Still that is no reason why these people should not do what the law requires.

It is to be regretted that such an expression of opinion should have been uttered by a magistrate in enforcing a section the effect of which is to prevent young persons—i.e., children under 16 years of age—from being employed at work for which they are physically unfit. The Act of Parliament to which he referred as driving business out of the City applies to the whole of the United Kingdom. The attitude adopted by the learned alderman towards the women factory inspectors who, in the course of their official duties, conduct prosecutions, may point to the desirability of employing solicitors or barristers to appear in court, but no doubt it is not thought desirable to incur unnecessary expense where the law and facts are not in dispute.

Looking Back.

FROM

THE LANCET, *SATURDAY*, April 30th, 1831.

CHRONIC BRONCHITIS—PARAGORIC ELIXIR.[1]

From William's Ward a case of chronic bronchitis was presented, which had existed many years. There was sonorous and sibilous rattle in various parts of the chest, and copious frothy expectoration, with cough and dyspnœa. There was from time to time a great increase of the difficulty of breathing,—spasmodic dyspnœa. He was relieved, he said, very much by taking the compound tincture of aloes saturated with bruised aniseed. There is a sort of elixir, a secret medicine, which evidently contains a great deal of aniseed, and certainly in many cases of spasmodic difficulty of breathing, affords very great relief. I endeavoured to imitate it at the suggestion of Dr. Prout, who found in it

[1] Dr. Elliotson on Peritonitis and Bronchitis at St. Thomas's Hospital.

myrrh and aloes, and considered it in every respect a compound tincture of aloes, only that it is made with rum instead of spirits of wine, and an abundance of aniseed. Of this he took one or two drachms three times a day, and, he said, with great relief. I know that many persons regret that the London College have altered paragoric. Paragoric elixir formerly contained a quantity of aniseed, and old practitioners who have used the old for many years, have told me frequently, that it is more effectual in relieving cough than paragoric as it is now made. I believe it was omitted on account of aniseed being supposed to possess no particular virtue, and yet being nauseous to many people. One gentleman told me that an old physician was very cross on hearing him regret that the aniseed was omitted, and declared that it was very properly omitted, for it turned everybody's stomach. But those best acquainted with paragoric believe, that though it may turn the stomach, the old medicine answered better. I can hardly say that I have, myself, made sufficient observations upon the two, but I have heard some elderly practitioners say, that there is a great difference in the effect of the two, and that they now keep two kinds, the new for the prescriptions of others, and the old for those who are wholly under their own care.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9203 births and 4983 deaths were registered during the week ending April 24th. The annual rate of mortality in these towns, which had been 17·0 and 17·1 per 1000 in the two preceding weeks, declined to 15·8 per 1000 in the week under notice. During the first three weeks of the current quarter the death-rate averaged 16·6 per 1000, while in London during the same period the mean rate was 16·1. The lowest recorded annual death-rates in these towns last week were 7·1 in Hornsey, 7·5 in Reading, 7·7 in Ipswich, and 8·5 in Willesden; the rates in the other towns ranged upwards to 21·1 in Preston, 21·4 in Plymouth, 22·4 in Wigan, 24·3 in Middlesbrough, and 26·5 in Swansea. In London the recorded death-rate during the week was 15·0 per 1000. The 4983 deaths from all causes in the 76 towns last week showed a decrease of 414 from the number in the preceding week, and included 518 which were referred to the principal epidemic diseases, against 593 and 584 in the two preceding weeks; of these 518 deaths, 265 resulted from measles, 131 from whooping-cough, 48 from diphtheria, 33 from diarrhœa, 28 from scarlet fever, and 13 from "fever" (principally enteric), but not any from small-pox. The 518 deaths from these epidemic diseases in the week under notice were equal to an annual rate of 1·6 per 1000, against 1·9 in each of the two preceding weeks; in London also the recorded death-rate from these diseases last week was equal to 1·6 per 1000. No death from any of these epidemic diseases was registered last week in Cardiff, Newport (Mon.), Hastings, Wallasey, or in six other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·5 in East Ham, in Wolverhampton, and in Stockport, 3·7 in Swansea, 5·8 in Wigan, and 7·1 in St. Helens. The fatal cases of measles in the 76 towns, which had declined from 438 to 321 in the five preceding weeks, further fell last week to 265; the highest death-rates from this disease were 2·4 in Derby, 2·5 in Devonport and in Wolverhampton, 2·9 in Plymouth, 3·8 in St. Helens, and 4·0 in Wigan. The deaths from whooping-cough, which had been 103, 107, and 130 in the three preceding weeks, were 131 in the week under notice, and caused death-rates ranging upwards to 1·2 in Wigan, 1·8 in Preston, 2·7 in St. Helens, and 3·2 in Swansea. The fatal cases of diphtheria, which had been 53 and 47 in the two preceding weeks, rose to 48 last week, the highest death-rate from this disease being 1·3 in West Hartlepool. The 33 deaths from diarrhœa and the 13 referred to "fever" showed a decline in each case from recent weekly numbers, and the 28 fatal cases of scarlet fever were fewer than the number recorded in any previous week of this year; 10 of the scarlet fever deaths belonged to London and its suburban districts, four to Liverpool, four to Manchester, and two to Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had decreased from 2873 to 2294 at the end of the seven preceding weeks, had further declined to 2219 on Saturday last, April 24th; 265 new cases were admitted during the week, against 273, 256, and 244 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 310 and 341 in the two preceding weeks, declined again to 294 in the week under notice, and were 18 below the corrected average number in the corresponding week of the five years 1904–08. The deaths in London directly attributed to influenza numbered 45 last week, and were 20 above the corrected average number. The causes of 43, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 50 other smaller towns; the 43 uncertified deaths included six in Liverpool, six in Sheffield, five in Birmingham, and three each in Bury, Blackburn, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·7 and 18·4 per 1000 in the two preceding weeks, declined again to 17·4 per 1000 in the week ending April 24th. During the first three weeks of the current quarter the annual death-rate in these towns has averaged 17·8 per 1000, and exceeded by 1·2 per 1000 the rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rates in the week under notice ranged from 14·0 in Leith and 14·1 in Aberdeen to 18·5 in Edinburgh and 21·0 in Paisley. The 620 deaths from all causes registered in the eight towns last week showed a decline of 36 from the number in the previous week, and included 86 which were referred to the principal epidemic diseases, against 90 and 98 in the two preceding weeks; of these 86 deaths, 46 resulted from whooping-cough, 18 from diarrhœa, eight from "fever," six from measles, five from diphtheria, and three from scarlet fever, but not any from small-pox. These 86 deaths from epidemic diseases were equal to an annual rate of 2·4 per 1000, or 0·8 more than the mean rate during the week under notice from the same diseases in the 76 English towns. The fatal cases of whooping-cough, which had been 47, 55, and 58 in the three preceding weeks, declined again last week to 46, of which 22 occurred in Glasgow, nine in Edinburgh, seven in Aberdeen, three in Dundee, three in Greenock, and two in Paisley. The 18 deaths from diarrhœa corresponded with the number in the preceding week, and included six in Glasgow, four in Dundee, three in Edinburgh, two in Aberdeen, and two in Leith. The deaths referred to "fever," which had been seven and four in the two preceding weeks, rose again to eight in the week under notice; these eight deaths included four from enteric fever in Glasgow and one in Leith, and one from cerebro-spinal meningitis in Edinburgh, one in Aberdeen, and one in Perth. The six fatal cases of measles exceeded the numbers in other recent weeks, and included five in Paisley. Three of the five deaths from diphtheria, and two of the three deaths from scarlet fever were registered in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 108 and 135 in the two preceding weeks, declined again to 118 in the week under notice, but exceeded by five the number returned in the corresponding week of last year. The causes of 13, or 2·1 per cent., of the deaths registered in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death during the same week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 25·5 and 27·7 per 1000 in the two preceding weeks, declined again to 24·5 per 1000 in the week ending April 24th. During the first three weeks of the current quarter the death-rate has averaged 25·9 per 1000, whereas the mean rate during the same period did not exceed 16·1 in London and 17·3 in Edinburgh. The 187 deaths of Dublin residents from all causes during

the week under notice were 25 fewer than the number in the previous week, and included 12 which were referred to the principal epidemic diseases, against 17 and 21 in the two preceding weeks. These 12 deaths were equal to an annual rate of 1·6 per 1000, the rate from the epidemic diseases during the same week being 1·6 in London and 1·9 in Edinburgh. Of the 12 deaths from these epidemic diseases in Dublin last week, six resulted from whooping-cough, three from "fever," two from measles, and one from diarrhœa, but not any from small-pox, from scarlet fever, or from diphtheria. Compared with the numbers in the two preceding weeks, the deaths from whooping-cough, from measles, and from diarrhœa showed a decline, while those referred to "fever" were in excess. The 187 deaths registered during the week included 28 of infants under one year of age and 59 of persons aged 60 years and upwards, both these numbers being lower than the corresponding numbers in the preceding week. Two inquest cases were registered, but no death was attributed to violence; while 84, or 44·9 per cent., of the deaths occurred in public institutions. The cause of one death in Dublin last week was not certified; in London all the 1393 deaths were duly certified, while in Edinburgh the proportion of uncertified deaths was 3·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: C. Bradley to the *Cæsar*, on recommissioning; and R. H. J. Browne to the *Temeraire*. Staff-Surgeons: P. H. Bannister to the *Skirmisher;* and G. E. Duncan to the *Sentinel*, on recommissioning. Surgeon: A. S. Bradley to the *Hussar*, additional and on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Tom P. Woodhouse to be Brevet-Colonel under the provisions of Article 35 and 307 of the Royal Warrant for Pay and Promotion, 1907 (dated April 28th, 1909).

Major W. Hallaran, who has returned from Jullundur, has been appointed to the London District.

RESERVE OF OFFICERS.

The appointment of Captain Herbert E. Dalby, of the late Royal Army Medical Corps (Militia), which was notified in the Gazette of Nov. 17th, 1908, is cancelled.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd London General Hospital: Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel John Adams, from the 21st Middlesex (The Finsbury) Volunteer Rifle Corps, to be Lieutenant-Colonel with the honorary rank of Surgeon-Colonel, with precedence as in the Volunteer Force (dated April 1st, 1908). William Kirman Pauli, late Surgeon-Lieutenant, 3rd Volunteer Battalion, The Royal Fusiliers (City of London Regiment), to be Major (dated March 31st, 1909).

2nd Western General Hospital: Lieutenant-Colonel Alfred H. Young resigns his commission (dated Feb. 27th, 1909). Major William Thorburn to be Lieutenant-Colonel (dated Feb. 28th, 1909). Frederic Hibbert Westmacott to be Major (dated Feb. 28th, 1909).

For attachment to Units other than Medical Units.—The undermentioned officers, from the Westmorland and Cumberland Imperial Yeomanry, are appointed to the corps, with precedence as in the Imperial Yeomanry (dated April 1st, 1908): Surgeon-Major Joseph Edward Bowser to be Major; Surgeon-Lieutenant John Livingstone to be Lieutenant. Lieutenant Thomas Price Thomas, from the Royal Army Medical Corps (Militia), to be Lieutenant, with precedence as in the Militia (dated March 11th, 1909).

Unattached List for the Territorial Force.—Surgeon-Captain Henry Waite, from the 2nd (Leeds) Yorkshire (West Riding) Royal Engineers (Volunteers), to be Surgeon-Major (dated Feb. 4th, 1909).

VOLUNTEER CORPS.

Rifle: The Cambridge University Volunteer Rifle Corps: Surgeon-Captain (Honorary Lieutenant in the Army) Robert W. Michell, not having signified his wish to serve in the Territorial Force, is struck off the strength of the corps (dated March 31st, 1908).

ROYAL ARMY MEDICAL CORPS EXAMINATION.

An examination of candidates for not less than 20 commissions in the corps will be held on July 28th and following days. Applications to compete should be made to the secretary, War Office, S.W., not later than July 19th next. The presence of candidates will be required in London from July 26th.

Correspondence.

"Audi alteram partem."

CONVULSIONS UNDER CHLOROFORM.

To the Editor of THE LANCET.

SIR,—The occurrence of convulsions during chloroform syncope, referred to by Dr. A. E. Russell in his Goulstonian lectures, is a matter of considerable interest which has not received the attention it deserves. 15 years ago,[1] before the Society of Anæsthetists, I remarked upon the similarity of the symptoms in certain cases of death under chloroform to those occurring in death from failure of the circulation from other causes—e.g., sudden hæmorrhage and cardiac syncope. I argued from this that deaths under chloroform were due to failure of the circulation and not to gradual paralysis of the respiratory centre. In a continuation of that paper[2] I suggested that the presence of convulsions or muscular disturbance in chloroform fatalities was a further argument in favour of sudden paralysis of the circulation being the cause of death.

The object of the two papers and others[3] subsequently published was to bring out the fact that the signs of failure of the circulation under chloroform are identical with those present under similar conditions occurring during consciousness—that is, exaggerated respirations, pallor and dilated pupils, with, in certain cases, muscular disturbance of a spasmodic character. The non-appreciation of this obvious fact is responsible for many of the deaths from chloroform. Gradual respiratory paralysis as the sole cause of death under chloroform has been so insisted upon that the significance of too free respiratory movements is apt to be overlooked. Secure in the belief that gradual cessation of respirations is the main danger, the chloroformist may easily take the free respirations as a sign of well-being. This failure of the circulation invariably sets in at an early stage of the inhalation, just at the period when the attention of the administrator is most likely to be distracted by preparations for the operation. Under these circumstances, the exaggerated respiratory movements pass for normal breathing; it is their sudden cessation which attracts notice to the grave condition of the patient. The only treatment for these cases is artificial respiration, so applied as to exert vigorous compression of the chest. The object of this is to stimulate the heart and to raise the blood pressure, not to get air into and out of the lungs. This, too, is often misunderstood, for even if the serious condition of the patient is recognised while respiration continues, nothing is done because artificial respiration seems uncalled for when free breathing is present. Thus the only chance of resuscitating the patient is lost, for to be effective artificial respiration must be begun on the first onset of exaggerated respirations.

Dr. Russell suggests that "in cases of chloroform syncope the anæsthetic would doubtless negative the spasm." This is true only to a limited extent and is governed mainly by the degree of general anæsthesia present when the syncope occurs. The valuable list of chloroform accidents collected by THE LANCET Chloroform Commission contains a number of cases in which muscular disturbance was present. These varied from mere trismus or slight

[1] The Mechanism of Death under Chloroform, THE LANCET, Nov. 17th, 1894, p. 1148.

[2] Ibid., Sept. 11th, 1897, p. 656.

[3] A Case of Death under Chloroform, THE LANCET, July 30th, 1898, p. 260; Accidents from Chloroform Anæsthesia, Medical Chronicle, 1906,

muscular rigidity to pronounced convulsions and opisthotonos. The factors which chiefly determine the extent of the muscular action are: the stage of general narcosis at which the syncope sets in; the suddenness and completeness of the arrest of circulation; the presence of any cause calculated to facilitate the induction of cerebral anæmia, such as the sitting posture; the condition of the muscular system as regards vigour and stability. The following cases taken from THE LANCET list illustrate the influence of the above conditions.

Case 55, a male, aged 30 years; operation, removal of necrosed bone from finger; duration of administration, from three to four minutes. Sitting posture. Symptoms: "Raised hands and trembled, kept spitting at the lint; appeared about to vomit. Suddenly he was violently convulsed as if in an epileptic fit." Here are associated an obviously slight degree of narcosis; the sitting posture conducive to cerebral anæmia; a young man with only a trifling ailment, therefore probably with vigorous muscular system. The arrest of circulation from the syncope produces "violent convulsions."

Case 83, a girl, aged 12 years; operation for necrosis of tibia. Symptoms: "Deadly pallor, twitching of muscles about mouth, eyes rolling up, pupils dilated, stertorous breathing." In this instance the syncope came on at a much more advanced stage of the anæsthesia, and the patient was presumably recumbent; the muscular disturbance was therefore slight.

These two cases are examples of many set forth in THE LANCET report and show the two extremes of muscular disturbance induced by chloroform syncope.

I have heard about, and been asked the treatment for, cases in which there occurs rigidity or fixation of the respiratory muscles in a condition of expiration. I have never seen any such symptoms, but imagine that such a condition is merely part of a general muscular action due to cerebral anæmia. It is most probably the contraction of the muscles immediately preceding dissolution. No doubt it is equivalent to the "sudden stiffening of all the muscles" which is referred to by Dr. Russell as exhibited by cats, when the cerebral circulation is interrupted. The only treatment under such circumstances is to attempt to restore the circulation, but at such a late stage there is very little chance of success except by direct massage of the heart. In this connexion Dr. Russell's remarks about the length of time the brain and heart can withstand the loss of circulation are very interesting and encouraging. If the brain can survive the loss of circulation for five minutes and the heart a much longer period of arrest, surely chloroform accidents should be more amenable to treatment? That they are often so hopeless is due to the fact that the symptoms of danger are not recognised sufficiently early. If the brain can do without circulation for five minutes the basal centres which are more fundamental in their nature should survive still longer. We are thus confronted by the fact that the respiratory centre, for instance, may be exhibiting energy for some minutes after cessation of the circulation; that the patient may, and no doubt does, continue breathing or making respiratory efforts for some time after the heart has ceased to beat or at least to beat effectively. This possibility makes it all the more necessary for the respirations to be studied carefully during chloroform administration, in conjunction with the circulation. Any alteration in the rhythm or character of the respiration, especially of the nature of an acceleration, should be viewed with suspicion and be checked by observation of the circulation. Failure of the circulation is indicated at once by exaggeration of the respirations, with which are associated pallor and dilated pupils. These symptoms may set in at any period of the inhalation, but almost invariably occur within the first few minutes of the administration.

I think that a proper appreciation of the first signs of danger under chloroform and prompt treatment will do more to diminish the number of fatalities than the use of any apparatus, however ingenious.

I am, Sir, yours faithfully,

ALEXANDER WILSON, F.R.C.S. Eng.,
Honorary Anæsthetist, Manchester Royal Infirmary;
Honorary Lecturer on Anæsthetics,
University of Manchester.

Manchester, April 20th, 1909.

THE UNIVERSITY OF LONDON AND THE STUDY OF ANTHROPOLOGY AND ETHNOLOGY.

To the Editor of THE LANCET.

SIR,—In the article on "An Imperial Bureau of Anthropology" published in THE LANCET of April 10th, you say that "the Universities of Cambridge and Oxford have established boards of anthropological studies, with the power of granting diplomas to those who have qualified by studies under their direction in prehistoric and historic anthropology and ethnology (including sociology and comparative religion, physical anthropology, and psychological anthropology). While the students at Oxford and Cambridge are thus provided for, no opportunities are given to students in London."

May I point out that for the past few years, owing to the munificent generosity of Mr. Martin White, the teaching of the subjects to which you refer has been carried on in London by two University professors of sociology, Mr. L. T. Hobhouse and Dr. E. A. Westermarck, and by a University lecturer in ethnology, Dr. A. C. Haddon (who holds a similar post at Cambridge). Sociology forms part of the curriculum, as an optional subject, both for the B.A. honours degree in philosophy and for the B.Sc. honours degree in economics, and the London classes in this subject are flourishing. The University is at the present moment making efforts to secure a permanent endowment for ethnology similar to that which has already been provided for the chairs of sociology, and for the past 12 months the Senate have been in communication with the Colonial Office with a view to ascertaining whether that Office would be able to assist and coöperate with them in the establishment of an ethnological department on a satisfactory basis.

With reference to the concluding paragraphs in your article, I beg to point out that the University has recently established a board of studies in ethnology.

I am, Sir, your obedient servant,

W. J. COLLINS, Vice-Chancellor.

South Kensington, S.W., April 27th, 1909.

*** We are glad to know from Sir W. J. Collins that a board of studies in ethnology has now been established by the University of London; in the last issue of the Calendar of the University (1908–09, p. 153) it is stated this board "is not yet instituted."—ED. L.

THE VASO-MOTOR THEORY OF EPILEPSY.

To the Editor of THE LANCET.

SIR,—In his admirable Goulstonian lectures embracing the above subject Dr. Alfred E. Russell is kind enough to refer to a work of mine in which are set forth almost identical views. He says: "Francis Hare maintains that the explanation of the aura is to be sought in the peripheral vaso-constriction which he postulates as preceding the cardiac inhibition."[1] The reference is accurate but incomplete. Some epileptic auræ felt at the periphery are certainly due to peripheral vaso-motor action, whether constrictive or dilative. In proof whereof I have adduced the following paragraphs from Hilton Fagge and Trousseau respectively.[2] "The patient perhaps experiences a sensation of coldness or weight in a limb; and the part is found on examination to be pale and cold to the touch, and to have its sensibility distinctly blunted" (Fagge). Others of the vascular changes may be peripheral and dilative. "A local determination of blood may occur in the finger, for instance, causing it to swell, reddening the skin and rendering it successively within a very short time red, and of a more or less deep violet colour. ..... The swelling is real, not apparent, for rings previously easy suddenly become too tight for the fingers" (Trousseau). So much for peripheral vaso-motor action as explaining some auræ felt at the periphery.

That, however, is but one side of the subject. On the same page I go on to say: "But many auræ are unassociated with appreciable objective changes in the part whence they

[1] THE LANCET, April 10th, 1905, p. 1031.
[2] The Food Factor in Disease, 1905, vol. i., p. 335.

seem to arise. Then it is not unnatural to believe that invisible vascular changes, similar in character to the visible peripheral vascular changes just described, are taking place in the cerebral centres and are the immediately responsible factors. On this view, we can understand many of the aurae of the special senses, observable also in migraine; and we can appreciate the time differences between the aurae of epilepsy and of migraine."

I am, Sir, yours faithfully,

Upper Norwood, April 25th, 1909. FRANCIS HARE.

THE PROXIMATE FACTOR OF DELIRIUM TREMENS.

To the Editor of THE LANCET.

SIR,—In my letter which appeared in THE LANCET of April 17th, p. 1136, I stated that "there are many more regular or continuous drunkards than periodic drunkards, but the latter are just as liable to suffer from delirium tremens as are the former." Dr. F. Hare considers that the opinion I express is not in accordance with generally received views.

It is difficult to determine what the generally received views are, for a reference to the works of various writers will demonstrate that opinions differ on the point. I base my opinion on the histories of 896 cases of inebriety, the records of persons who have been admitted into the Dalrymple Home Retreat. Of this number 669 were regular drinkers, 215 of whom had suffered from delirum tremens. The periodic inebriates numbered 227, of whom 74 had had delirium tremens. In both classes the delirium tremens percentage works out at about 32. By periodic inebriate I mean persons who at regular or irregular intervals give way to outbursts of alcoholic excess; between the outbursts they are either temperate or are total abstainers. The 669 regular drinkers mentioned above are entirely composed of the soaker and the chronic alcoholist who manifests occasional outbursts—types referred to by Dr. Hare. I have found that these persons, as well as the periodics, can have their liquor cut off suddenly with perfect safety.

Dr. Hare further finds that my statement is opposed to his experience at the Norwood Sanatorium. His experience there, unless I misread his report, has consisted of 13 cases of delirium tremens which occurred among some 200 admissions during a period of about two years, a number which appears to me totally insufficient as a basis for contention.

I am, Sir, yours faithfully,

April 26th, 1909. F. S. D. HOGG.

THE RÔLE OF THE SALIVA IN THE TRANSMISSION OF TUBERCLE.

To the Editor of THE LANCET.

SIR,—In connexion with the instructive article by Dr. N Neild and Dr. E. V. Dunkley on "The Rôle of the Saliva in the Transmission of Tubercle"[1] the following may be of interest to your readers. A patient attending the inoculation department at the London Hospital, suffering from lupus of the nose and naso-pharynx, is by trade an envelope folder. I questioned her to-day about the details of her work and find that her duties are folding, gumming, and sticking envelopes. The gum is applied with a brush and the flaps are then pressed down; should there be any excess of gum pressed out along the flaps, this has to be licked off with the tongue of the folder so that the envelopes shall not stick together when piled up. It seems, therefore, that if tubercle can be transmitted by licking envelopes the danger may be to the sender as well as to the receiver.

I am, Sir, yours faithfully,

York-street, Portman-square, W. G. T. WESTERN.

THE DISAPPEARANCE OF MR. JOHN DAVIDSON.

To the Editor of THE LANCET.

SIR,—Among the documents found since the disappearance of Mr. John Davidson was one in which he speaks of his inability to face the effects of cancer. His family wish, in the circumstances, to discover on what grounds he based his belief that he was suffering from this disease, and I write on their behalf to ask if you will allow me, through your columns, to request any medical man whom Mr. Davidson might have consulted in the last few years to communicate with me at this address if he feels himself free to do so.

I am, Sir, yours faithfully,

GRANT RICHARDS.

36, Roland-gardens, S.W., April 23rd, 1909.

[1] THE LANCET, April 17th, p. 1096.

AN AMBULANCE SERVICE FOR THE METROPOLIS.

To the Editor of THE LANCET.

SIR,—I think that if Mr. H. Nelson Hardy (who writes under the above heading in THE LANCET of April 24th) had read with care the Blue-book containing the report of the Ambulance Committee, or your article upon it in THE LANCET of April 3rd, he would have seen that the question of providing an ambulance service for London, if such a service is to be efficient, economical, and useful, is hardly to be solved by the Home Office authorising the purchase of ambulances by the police. Ambulances have to be housed, maintained, and manned, telephonic communication must be so established as to enable them to be speedily summoned, and all this has to be paid for. Also, as your article makes clear, the service in order to be of real utility will have to be so arranged that it can deal not only with street accidents but with those on private premises, and with other cases which, though needing removal by ambulance, are not accidents. The committee was pretty fully informed as to the excellent work carried out in the City under Captain Nott Bower; it had his evidence and that of a large number of other witnesses, including police surgeons and other members of the medical profession; it had visited and examined on the spot the systems in use at Manchester and Liverpool; it had detailed information from a number of provincial boroughs, and also from Paris, Berlin, New York, Boston, and other foreign cities. The question of police administration is thus summed up in his memorandum to the report by Sir William Collins, who says on this point: "There is much to be said for the police undertaking the duty. If the Metropolitan Police were a municipal force, as in the City and the provinces, there can be little doubt that the duty would fall to them. As it is, there appears to be no disposition on their part to undertake it, and my colleagues consider it undesirable for various reasons to assign this additional work to them." There are many reasons which render it highly desirable that the Metropolitan Police should continue to be under the control of the Home Office and not of the London County Council, but it seems to me that London would hardly acquiesce without protest in the Home Office being authorised by Act of Parliament to levy such a rate as would be required for duties not connected with the essential functions of the police, or that it can be desirable for a body responsible only to that department to control an enlarged ambulance service. If the proposed service were confined to the removal of those suffering from street accidents within the strictly metropolitan area it might be different.

I am, Sir, yours faithfully,

April 26th, 1909. E. A. A.

CARDIFF MEDICAL SOCIETY.—The annual address of this society will be given in the lecture-hall of the Young Men's Christian Association on Friday, June 4th, at 3.30 P.M., and will be delivered, as was announced in THE LANCET of April 24th, by Dr. J. Lucas Championnière of Paris, President of the International Surgical Society, who has taken as his subject the Modern Treatment of Fractures. The annual dinner of the society will be held on the same evening at the Royal Hotel, Cardiff, at 7.30 P.M. Dr. Lucas Championnière will make the presentation of the Lynn Thomas and Skyrme Fund after the dinner. All members of the profession are cordially invited to be present at the dinner, and as the occasion is a special one it is hoped that as many as possible will avail themselves of the opportunity. Tickets (*7s. 6d.* each) can be obtained from the honorary secretaries, Mr. F. P. S. Cresswell, 24, Windsor-place, Cardiff, and Dr. William Martin, 17, Windsor-place, Cardiff, and it is requested that application for them be made as soon as possible, and in any event not later than May 28th.

THE DRAINAGE OF CAIRO.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Continued from p. 1210.)

A COLLECTION OF BARREN SCHEMES.—SELF-CLEANSING SEWERS AND THE SEPARATE SYSTEM.—THE SCHEME THAT HAS BEEN FINALLY ADOPTED.—THE EXCEPTIONAL FACILITIES OF CAIRO: LITTLE RAIN AND LAND WITHOUT PURCHASE.

Cairo.

CAIRO, especially the European quarter, is almost flat and therefore cannot be drained by gravitation. Many schemes have been prepared so as to overcome this difficulty, but none of them were carried out. Ultimately it was determined to seek the best available technical advice. For that purpose Mr. C. Carkeet James, member of the Institute of Civil Engineers, who had distinguished himself notably by planning and carrying out the drainage of Bombay, was appointed Controller-General of the main drainage department at Cairo. He was given a couple of years to study the situation, which he soon found to be so different from what generally exists that past experience helped him little. He faced the situation, however, with courage and ingenuity, and after a while began to prepare schemes for the drainage of Cairo; but his schemes might be likened to ninepins. Like the many proposals that had preceded his coming, they were no sooner put up than they were knocked down. His first scheme was rejected because the sewage farm which he proposed to establish was on land that might in the course of time be required for building purposes, and his pumping station was too near to dwelling houses. The site for the sewage farm in the second scheme was that which has now been accepted, but the pumping station, though away from existing houses, might prove, so it was thought, a nuisance to prospective buildings. The proposed position of the pumping station also wrecked the third scheme; and when in the fourth scheme Mr. Carkeet James sought to avoid these objections by going to the other side of the Nile the suggestion was rejected because of the difficulty and cost of carrying the sewage under the Nile by means of a syphon. A fifth scheme was thrown out because the new sites selected for the pumping station and sewage farm were not considered any improvement on those that had been previously proposed. The sixth scheme did away altogether with a sewage farm and established sewage purification works instead, discharging the purified sewage into the Nile. But there was a lack of faith in the process of purification and objections were raised to the discharge of sewage, whether purified or not, into the Nile. Schemes 7 and 8 shared the fate of their predecessors, being condemned because no satisfactory place for the pumping station had been found. The ninth scheme was only objected to on the ground of expense and the difficulty of getting sufficient water. The tenth scheme was rejected because it was too expensive, and it was held to be unnecessary to employ, as proposed, two different systems of raising sewage—namely, the vacuum and the compressed air systems. It was not till he had reached his eleventh scheme that Mr. Carkeet James contrived to reconcile the many conflicting interests which had till then successfully thwarted his various plans.

The main difficulty, as already stated, has been that the populous part of Cairo is built on a plain and therefore cannot be drained by simple gravitation to a sufficient distance to reach a conveniently situated sewage farm or any works for the disposal of sewage. On the other hand, it is possible to drain one suburban part of the city by gravitation to a pumping station, and this is defined in the scheme now accepted as the "gravitation area." The more important part of the city is divided up into small sections. In the centre of each section of what is to be called the "sectional area" there will be a Shone ejector. This system is well known and is applied in many foreign and some British towns. Theoretically its great advantage is that of giving to absolutely flat districts sewers which nevertheless have so efficient a fall as to be self-cleansing. Perhaps it may be said that at present the majority, or in any case a very large portion, of the sewers which rely only on gravitation to assure the flow of the sewage are not self-cleansing. Though the ground may be absolutely level a sufficient fall can always be given to a sewer by digging down into the earth deeper and deeper, on the one condition, however, that the sewer in question shall not be very long. Therefore the success of the Shone system depends on placing the ejectors near enough to each other. It is well known that the ejector is a drum-shaped receptacle which works automatically by pneumatic pressure. In the case of the English Houses of Parliament it was found that there was not a sufficient fall to drain them efficiently into the Westminster main sewer, and so the required fall was created by digging the drains down to a much lower level than the great sewer that passes by Westminster Bridge. This done, a Shone ejector was placed at the end of the system to receive all the drainage of the Houses of Parliament and raise it up again to a different height to be discharged into the Westminster main sewer. This is how it is proposed to drain at Cairo a thickly populated area measuring 1721 hectares. The success will depend on employing a sufficient number of ejectors, otherwise they would have to be placed so far apart that it will not be possible to give a steep enough gradient to the sewers feeding these ejectors for the sewers to be self-cleansing. Mr. Carkeet James, however, does not complain of any stinting in this respect. At Toulon, I remember many years ago, after the cholera scare, it was proposed to employ the same system, but the scheme, as laid down, would have worked badly because there were not sufficient ejectors.

The question of an efficient fall in the sewers is of greater importance in oriental than in English towns. In England it is very generally thought that a gradient which will give to the flowing sewage a velocity per second of 2 feet or 2½ feet (0·60 to 0·75 metre) is enough to prevent the formation of deposits on the sides of the sewers; in other words, to insure self-cleansing conditions. But in Cairo, where there will be practically no rainwater and far more extraneous matter than is the rule in England, this would be quite inadequate, and the sewers might not only be dirty but even blocked up. Therefore the scheme adopted lays down as a fundamental principle that all sewers, whether running full or half full, shall have a minimum velocity of 1·05 metres, or nearly 3½ feet per second. This should be strong enough to push forward a stone of the ordinary size of street macadam.

The power station will be situated at Pont Sahel at the commencement of the Ismailia Canal. This faces the most populous part of the city and is conveniently near to the district where the ejectors will be employed. As the power to be generated is compressed air it will occasion no nuisance whatsoever. Nevertheless, it would have been well if this power station had stood on the same premises as those occupied by the general scavenging and road department. This is the case at Southampton where the Shone system obtains, and the advantage is that the compressed air is used for many other purposes besides providing the motive force to raise the sewage out of and above the ejectors. It saves much labour for all the smithy work necessary to mend the town rolling stock, &c., as bellows are no longer needed. It is only necessary to touch a tap to obtain a continuous discharge of air into the fire and the force of this blast can be regulated to a nicety. Again, all the dry food, such as chopped hay or oats, given to the numerous horses, mules, &c., employed for the municipal services, is beautifully cleaned by discharging into it a current of compressed air. All the dust and impurities are blown away and absolutely pure corn and fodder given to the animals. This has so improved the horses of the Southampton municipality that they have become the pride of the town. The advantage of municipal enterprise is often somewhat to seek, but, at any rate, by it totally different services can be welded together to their mutual advantage. Thus, at Cairo the sewage scheme might be made to reduce the cost and improve the condition of the smithies, while also securing better food, therefore better health, for all the horses, mules, and donkeys employed.

The outfall of the sealed—that is, the air-tight—iron mains which receive the contents of the ejectors is not to be the general outfall of the entire system at Cairo; that is at the Pont Chamra, and into the head or commencement of the main collector which is to receive the sewage from the suburban districts that are to be drained by gravitation only. This main collector will follow the road to Teftiche-el-Koubbeh, thence along the Materieh road to Ein-el-Chams, and then it

will run by the side of the Cabel canal to a point one kilometre east of the village of Kafr-el-Gamous. This collector commences at a depth of 3·03 metres. When it reaches the canal it is 4·05, but quite at the end of its course and for only a short distance, it descends to a depth of ten metres. It will be a circular sewer of 1·60 metres in diameter, with a minimum thickness of concrete of 0·35 metre and an external breadth of 2·32 metres. Into this main sewer will be drained by gravitation the old and new barracks, and all the buildings of the suburbs of Abbassieh, Demerdache, Koubbeh, Heliopolis Oasis, Zeitoum, Helmieh, Matarieh, and Ein-el-Chams, covering altogether 1258 hectares, and this is to be done immediately. Ultimately, another neighbouring area of 1775 hectares will be added. With very few exceptions the sewers will be laid at a gradient that will give a velocity of 3½ feet per second to the sewage. These branch sewers will vary from 8 to 20 inches in diameter. The main collector will be 13 kilometres in length, and at its end a great pumping station will be built to lift the sewage up and force it forward in a rising main so that it may travel yet another 11,670 metres. It will then reach the sewage farm, which is situated in the desert 26 kilometres north of Cairo. These last 11 kilometres represent the length of what is called the rising main. If it is constructed of cast iron or steel its diameter will be 36 inches (0·914 metre) and the flow 4·24 feet (1·292 metres) per second. If it is made of reinforced concrete the diameter will be 38 inches and the velocity 3·31 feet per second. The cement is more susceptible to the erosive action of the sand in the sewage, and this reduces the velocity of the flow.

The purification works will be at the foot of sand-hills to the east of the Khanka lunatic asylum at 26 metres above the river level, with a gentle fall in a southerly direction. The soil here has been analysed and found admirably suited for the purpose, and probably it will only be necessary to pass the sewage once through liquefying tanks before using it for irrigation purposes. Not only will the soil purify the sewage but it will grow almost any crop that flourishes in Egypt. A thousand feddans or acres will be brought under cultivation and should produce a revenue of £E.15 per feddan. Mr. Carkeet James, however, judging from his Indian experience, maintains that a very much larger income might be obtained. Indeed, if properly managed the sewage farm should, according to some optimistic estimates, bring in sufficient profit to cover the working expenses of the sewage scheme. In one respect Cairo is favoured among cities. It has its disadvantages, but where in Europe will any large town be found that has close to its gates such a vast expanse of unoccupied, unowned land all ready to be converted, without the cost of purchase, into sewage farms, rubbish depôts, and sites for isolation hospitals, and so on? In England especially the difficulty of dealing with sewage is that of finding land for sewage works, but the same difficulty occurs in the neighbourhood of many Continental capitals. What student of these questions has not followed with thrilling interest the homeric struggle of Durand Clay and his fellow disciples of the *tout à l'égout* doctrine to obtain land enough to create sewage farms round and about Paris. More than 40 years ago this struggle was commenced and it is not terminated yet. But in the desert which is so close to Cairo there are no proprietors of valuable land and of house property to organise demonstrations, to present petitions, to run candidates for Parliament, all so as to stop the execution of a drainage scheme which, as was the case near Paris, they imagined might cause a nuisance in their neighbourhood. At Cairo it is only necessary to go about 11 kilometres beyond the area to be drained to reach a spot in the desert where no one owns property and where no one can protest. For this exceptional facility the inhabitants of Cairo should be most thankful.

Again, Cairo enjoys the advantage of a very small rainfall. According to the carefully collected observations of the Survey Department the average rainfall in Cairo for the last 11 years is 23·50 millimetres. The maximum and minimum annual rainfall were 51·10 and 4·10 millimetres respectively. During the years in question there have been only eight occasions when the amount of rain that fell on any one day exceeded 10 millimetres (0·4 inch). On three occasions 20 and on one occasion 24·60 millimetres fell within 24 hours. Therefore the very heavy rains are extremely rare, and it would be a waste of money to provide big sewers to carry this large volume of water away. Also, it is an admitted principle that it is only the early rush of water, the first and small amount of rain, that is foul. The surface dirt is removed at the commencement of the downpour and then the water runs clear. Thus a storm overflow into the nearest river is allowed in almost all schemes of drainage. Again, if the sewers were big enough to carry away all the rain water they would be too big for the ordinary sewage. There would not be sufficient water in such large sewers during the dry weather to insure a self-cleansing action. Therefore the separate system is especially suited to the conditions prevailing at Cairo. In the neighbourhood of the Opera House an area of 290 hectares has already been drained and has its sewer outfall in the Ismailia Canal, near Pont Limoun, where the chief railway station stands. These surface drains bring water from the washings of the markets and the asphalted streets. Such water is often very foul and causes considerable nuisance. These existing drains, though not perfect and providing a velocity of only 2 feet per second, are considered good enough with slight repairs and alterations to be preserved for surface drainage.

At the outfall of this old drain the existing sump or catch-pit will be enlarged so as to arrest the silt and enable the drains to run dry, thus preventing their becoming a breeding place for mosquitoes. When the amount of this surface drainage and rain-water drainage does not exceed half the calculated maximum of flow from the drainage area it will be pumped up into the sealed sewage main, passing along the Sharia Abbas and connected with the Shone system, which in its turn discharges into the main collector, commencing at Pont Chamra and connected with the combined or gravitation system. But if through heavy rain this amount is exceeded then a storm overflow into the Nile is provided.

Without entering into all the other details, for they are based on the same principle, it will be seen at once that we have here an inconsistency. The great advantage of what is called the separate system is that it separates. When dealing only with sewage and slop water—in other words, when the rain water is excluded—it is then easy to calculate with sufficient precision to cover all practical purposes what will be the quality and the quantity of sewage arriving hour per hour at the sewage outfall. It is then possible to decide how to utilise this sewage. But if the rain water is admitted then the quantity and quality of the sewage become very untrustworthy. Now at Cairo it is proposed to establish the separate system, but the advantage in respect to the treatment of sewage which this affords is lost by allowing such rain water as there is to be pumped into the sealed mains connected with the Shone ejectors, and further discharging these sealed mains into the general collector that also receives rain water. Thus, and up to the point when the storm overflows come into action, the rain water will reach the sewage farm, having first mixed with, diluted, and altered the nature of the normal sewage. In England or any other country where rain is abundant and frequent this would be a very serious objection. In Cairo, where there is so very little rain, it may prove an advantage. The fact that rain falls so rarely increases the likelihood that the first wash of the rain will be exceptionally foul. It is therefore an advantage that the first rush of rain should go with the sewage to the sewer outfall and not flow into the river. Also, an occasional discharge of rain water into the main collector will be of service as an extra flush in case the ordinary flow should fail in its self-cleansing action. To judge, however, from the levels given, and the size of the sewers proposed, there is every reason to believe that in this respect the scheme is likely to prove satisfactory. If the sewage reaches the sewer and is accompanied with a sufficient volume of water there is but little doubt that it will be borne away at once and soon reach the sewage farm, where it will be placed beyond the possibility of injuring the population of Cairo. The laying down of such a general scheme of drainage is by far the most difficult and expensive part of the work, yet the health of the population probably depends more on the detail of the connexion between the houses and the sewers than on the sewers themselves. It is easier to have a sanitary house draining into an ill-constructed sewer than it would be to maintain the health of people living in insanitary houses

that are drained into model sewers. Therefore, it will now be necessary to study the domestic details of application before a definite opinion can be formed as to the likely success of this scheme.

(To be continued.)

CHOLERA AND PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE following figures, relating to the further progress of cholera in Russia, are in continuation of those published in my last letter on the subject.[1] Between Feb. 8th (21st) and 14th (27th) there were 110 cases of the disease, with 35 deaths, distributed as follows: in St. Petersburg, 88 cases and 25 deaths; in the St. Petersburg government, 13 cases and 6 deaths; in the Yaroslavl government, 5 cases and 2 deaths; in the Tula government, 3 cases and 2 deaths; and in the Don Cossack territory, 1 case with no death. Between Feb. 15th (28th) and 21st (March 6th) there were 97 cases with 46 deaths; of these 84 cases and 39 deaths occurred in the town of St. Petersburg, and the remainder were distributed between the governments of St. Petersburg and Yaroslavl and the Don Cossack territory. Between Feb. 22nd and 28th (March 7th and 13th) there were 51 cases and 19 deaths; of these 49 cases and 18 deaths occurred in St. Petersburg and the remainder in the governments of St. Petersburg and Yaroslavl and in the town of Kharkof (a single case, in a traveller from the north of Russia). Between March 1st (14th) and 7th (20th) 45 cases and 8 deaths were registered, all of which occurred in the capital or in the government of Yaroslavl. In that week the town of Rybinsk was declared "threatened" with cholera and the Don Cossack territory was declared free from the disease. Finally, between March 8th (21st) and 14th (27th) only 25 cases of cholera, with 5 deaths, were recorded, all in St. Petersburg, and between March 15th (28th) and 21st (April 3rd) only 10 cases, with 3 deaths, also confined to the capital.

Cholera and the Water-supply of St. Petersburg.

This marked reduction in the numbers of cases and deaths in the city of St. Petersburg and the apparent disappearance of the disease from other parts of Russia are satisfactory as far as they go, but it is evident that the infection still lingers in the capital, at any rate; the approach of warmer weather is not far off and a fresh revival of the disease in the coming summer must be regarded as almost inevitable. Some leading Russian newspapers have recently contained somewhat bitter comments on the measures, or rather on the comparative lack of measures, taken by the responsible authorities to deal with the outbreak. They point out that St. Petersburg in particular has no proper water-supply, and that the prevalence and continuance of the disease there have been mainly due to the fact that the drinking water supplied to the people has been seriously contaminated with the infection of cholera. That water is obtained directly from the river Neva. According to a communication recently made to the Duma and quoted in the journals the water is taken from the river at a point above which the stream has already been polluted by receiving the drainage of a large population. As much as 15,000,000 *vedros* (a *vedro* is equal to 2·7 gallons) of sewage is said to enter the river above the point in question. The water is said to be distributed to the town either unfiltered or imperfectly filtered. For some time past a scheme has been talked of, under which water would be brought to St. Petersburg from the Lake of Ladoga. The distance of the lake from the city is approximately 30 miles and the cost of executing the proposed scheme is estimated at about 30,000,000 roubles (say £3,000,000 sterling). It is also reckoned that at least several years would be required to carry out the scheme in its entirety, and in the meantime, it is pointed out, there is urgent need of finding some temporary and less costly method of dealing with the evil, though, with one exception, no very definite proposal has yet been made as to the form the temporary measure should take. There can be no doubt that both the question of the water-supply and that of the drainage of St. Petersburg involve very difficult problems. The main part of the city lies practically at sea-level; when high westerly winds prevail the waters of the Gulf of Finland are driven up, and a great part of the city is inundated. The population of the city is now put at 2,000,000 inhabitants, requiring about 25,000,000 *vedros* of water per day. The same quantity of liquid sewage is discharged into the Neva every day. It is impossible to render this harmless, and in the meantime it is impossible to obtain the main water-supply from any other source. Any measure that would tend to diminish even temporarily this obviously immense danger should prove welcome, and an ingenious suggestion was recently made by Dr. P. P. Bakaleinik, in a paper read before the Russian National Health Society. This suggestion is based on the obvious fact that the bulk of the sewage matter reaches the river during the day and relatively little during the night. Samples of water were taken from the middle of the Troitski bridge over the Neva at different hours of the day and in the night at 2, 4, and 6 A.M., and were analysed chemically and bacteriologically. It was found that while the specimens taken during the day contained an appreciable quantity of urea (*sic*) and ammonia and of suspended foreign matters, those taken between the hours of 2 and 6 A.M. contained none of these and were also free from the presence of cholera vibrios. (It appears to be implied, though it is not stated, that such vibrios were present in the day specimens.) The proposal made is therefore to collect the daily supply of water from the Neva in the early hours of the morning and store it in large reservoirs, from which it would be distributed to the city. Three such reservoirs, in different parts of the city, would, it is thought, suffice. They could be constructed, it is said, in about ten weeks and would cost incomparably less than the Lake Ladoga scheme. Without a full knowledge of all the circumstances it is difficult to form an opinion as to the practicability of this proposal; it would seem at first sight to offer certain distinct advantages as a temporary palliative of a serious evil, but it may perhaps be doubted whether the practical difficulties—the cost and the time required to carry out the scheme—are not considerably greater than the author of the proposal considers them to be. It would, moreover, be unfortunate if a temporary scheme such as the one proposed should stand in the way of carrying out a radical and permanent scheme for supplying the Russian capital with a pure water-supply, free from all possible chance of contamination.

Plague in Bagdad.

The records of the outbreak of plague in Bagdad were brought down to Jan. 27th in my letter published in THE LANCET of Feb. 20th (p. 578). After that date only a single death ("found dead") was observed on Feb. 5th, and on Feb. 23rd the town was declared "clean," and the measures in force on persons and river boats leaving Bagdad were suppressed. In all, 157 cases and 85 deaths were registered in Bagdad since May 7th, 1908.

Plague in Jeddah.

The outbreak of plague in Jeddah is declining, as shown by the following figures (in continuation of those published in THE LANCET of March 20th, p. 872):—

Week ending			March	7th	.....	26	cases,	22 deaths.
,,	,,	,,		14th	.....	20	,,	16 ,,
,,	,,	,,		21st	.....	16	,,	16 ,,
,,	,,	,,		28th	.....	18	,,	15 ,,
,,	,,		April	4th	.....	9	,,	8 ,,
,,	,,	,,		11th	.....	5	,,	6 ,,

The total number of cases of plague in Jeddah since the revival of the disease there on Dec. 12th last has been 176 and that of deaths 157. This year Yanbo has so far escaped infection.

Constantinople, April 15th.

[1] THE LANCET, March 20th, 1909, p. 872.

THE Fifth International Congress of Medical Electrology and Radiology will be held at Barcelona on Sept. 13th to 18th, 1910.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

Llandudno Water-supply.

THE reputation which has so long been held by Llandudno as a health resort is in no small measure due to the excellent manner in which the requirements of the town are looked after by the local sanitary authority. Included in the municipal undertakings are an isolation hospital and a refuse destructor, and during recent years a public slaughter-house has been established. The water-supply is obtained from two small lakes, Dulyn and Melynllyn, situated in the Snowdon district not far from Carnedd Llewellyn, a mountain peak nearly as high as Snowdon itself. It is nearly 20 years since the water was first brought to the town from these lakes, and neither the adequacy nor the quality of the supply has ever been questioned. There has now been completed an undertaking which will meet the needs of the district for many years to come. A second main has been laid at a cost of £33,000, so that it is possible to deliver daily 2,500,000 gallons. The watershed of the two lakes is not only under the control of, but it is owned by, the Llandudno council, so that the possibilities of pollution are extremely remote.

The House Physiciancy at the Swansea Hospital.

Upon the position of house physician to the Swansea Hospital recently becoming vacant applications were invited from medical practitioners, and when the board of management came to make the appointment it was found that one of the two applicants had withdrawn and that the other was a lady. Dr. R. C. Elsworth proposed that the appointment should be again advertised and that candidates should be confined to men. He expressed the opinion that the staff should either be all men or all women. After some discussion and the rejection of other proposals the resolution was carried. One of the resident posts has already been filled by a lady, but there appears to be some difference of opinion among the honorary staff as to whether this is desirable.

Low Temperature of Cardiff Schools.

At the last meeting of the School Management Committee of the Cardiff Education Committee attention was drawn to the very low temperature which prevailed in some of the public elementary schools at the time when the children first assembled in the morning. The schools had been supplied with charts for recording the temperatures in the class-rooms. These were taken under the supervision of the head teachers at 9 A.M., 12 noon, and 3 P.M. In his annual report the school medical officer (Dr. E. Walford) has recorded the maximum and minimum temperatures registered during the four winter months of 1908 in some of the infant schools. A perusal of this record quite justifies the complaints made of lack of heating. In the 31 schools of which particulars are given the minimum temperature, taken at 9 A.M. in January reached 40° F. in only one instance. In two schools it was 32° and in 15 schools it varied from 33° to 36°. It would be of interest to know whether the attendances were in any way affected at these particular schools in consequence of the badly warmed rooms.

West Wales Asylum.

At the end of the March quarter there were 676 patients in the three counties (Carmarthen, Cardigan, and Pembroke) asylum. The rate of payment for the maintenance of pauper patients has been fixed at 8*s.* 9*d.* per head weekly for the current six months.

Cardiff Water-supply.

The water-supply of Cardiff is obtained from the Brecknockshire hills, where it is impounded in two large reservoirs. Even when these works were first undertaken it was realised that it would be necessary at no very distant date to construct a third reservoir unless there came a check in the growth of the town. There seems no likelihood of that taking place, and after unsuccessful attempts at securing additional supplies of water elsewhere, including the very large quantity which has to be constantly pumped out of the Severn Tunnel springs, the city corporation decided to promote a Bill to enable it to construct the third reservoir, which will have a capacity of 1075 million gallons. A committee of the House of Commons passed the preamble of the Bill on April 23rd, so that a serious effort will now be made to proceed with the undertaking. The population of the town is now estimated at 191,500 and the daily consumption of water per head is 28 gallons. The new works will take about six years to complete, and it is anticipated that even if the present rate of increase in the population continues the additional storage provided will insure the same amount per head daily in 30 years' time. The cost of the undertaking is estimated at £272,000.

April 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

School Blackboards.

THE medical officer of health of Haslingden, Mr. F. J. Hindle, is also medical inspector of school children, and he has made a statement as to the injurious effect on the sight of the blackboard, that it is responsible in some degree for the defective sight of the pupils. He says that the almost constant use of the blackboard causes eyestrain, and that though his own vision is perfectly normal, he has had difficulty in deciphering things depicted on the blackboard where in other circumstances the deciphering should have been easy. He has noticed that scholars resort to various expedients to overcome the difficulties arising from the shiny surface of the board. He advises that the blackboard and white chalk should be replaced by white boards or slabs and black chalk or crayon, which, he thinks, would do away with difficulties of focus and of defective sight.

The Gore Brook Again.

It would seem that the work of the Mersey and Irwell joint committee—namely, the purification of our rivers—is still very far from completion. Salford, in spite of its endeavours, is at fault, for the dry weather flow of sewage in the borough is approximately 12,000,000 gallons a day, which is about 4,000,000 gallons a day more than the present filtration beds can deal with. So the Salford Corporation is to be asked how it proposes to deal with the increase of flow of sewage. But the Gore Brook never fails to provide a subject for discussion at the meetings of the joint committee, and to bring forth some futile efforts to prevent or minimise its offensive smells. One of the last has been to sterilise the sewage effluent during dry days in the summer months. But as the chief inspector had pointed out, "there was a distinct nuisance arising from the brook in the vicinity of Birch Park" on March 21st, not usually reckoned as a summer's day. Gorton, which has to curb the tendency of the brook to make the vilest of bad smells, says it is doing all it can and throws the blame on its advisers because they had not been sufficiently insistent in their recommendations. The present state of things is that the subcommittee of the Mersey and Irwell joint committee "recommended that the clerk be instructed to inform the Gorton urban district council of the offensive condition of the stream on the date named (March 21st), and to urge it, as the sanitary authority, to take such steps as it might find necessary in order to relieve the inhabitants of its own district and of the city of Manchester of a repetition of the nuisance during the ensuing summer." But the brook heeds not legal phraseology and is no doubt prepared to surpass its former efforts in the production of vile smells. It is a curious thing that for a long series of years this dirty ditch has defied the best efforts, as they must be supposed to be, of the joint committee, the city of Manchester, and the Gorton urban district council, and, as far as present signs go, will continue to triumph over them.

Common lodging-houses.

Some little time ago Manchester was startled by a fire at a lodging-house, where 200 or 300 people could be put up. There was some loss of life, and there seemed to be a lack of supervision over those responsible. Since then, however, action has been taken with a view of securing better safeguards against fire and panic casualties. The Local Government Board has sanctioned Manchester's adoption of Part 5 of the Public Health Acts Amendment Act of last year, and the Watch Committee will be able by the end

of next month to have a system of registration and to place obligations on the owners of lodging-houses, which should improve some of them and perhaps lead to the closing of some of the less desirable.

April 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Needs of the Scottish Universities.

THE Treasury Committee appointed by the Chancellor of the Exchequer to inquire into the needs of the Scottish Universities and Colleges for further assistance from Imperial funds visited Glasgow last week. The Earl of Elgin (chairman), Sir Kenelm Digby, Sir Harry Reichel, Miss Haldane, Professor A. R. Forsyth, F.R.S., Professor G. Sims Woodhead, Dr. Charles Douglas, and Mr. H. Warre Cornish (secretary) met in the University Court Room and took evidence from Principal Sir Donald MacAlister, Professor Stewart, and Dr. David Murray, the representatives of the University Court. The committee afterwards inspected the new laboratories for physics, physiology, &c., the library, and the Hunterian Museum, where they were received by the respective staffs of the departments. Later in the afternoon a visit was paid to Queen Margaret College.

Medical Students and the Arts Course in the University of Glasgow.

With reference to the new regulations for the arts degree, which were under consideration last week at a meeting of the General Council of the University of Glasgow, attention was drawn to No. 2 of the regulations, which read:—

> Not more than three languages other than English, and not more than two sciences, are to be included in any curriculum.

It was pointed out that the intention of the Senate was that a double degree should not be too cheap, and the scientific members of the Senate concurred in this. But the regulation so framed put the student of medicine who was graduating in arts at a considerable disadvantage. Principal MacAlister, in discussing the question, said that nothing but good would result from encouraging the medical students to take the arts degree, and it was finally agreed that the regulation should read:—

> Not more than three languages other than English, and not more than two double courses, or three single courses in the department of science, are to be included in any curriculum.

Pathologist for Royal Infirmary, Glasgow.

The directors of the Glasgow Royal Infirmary have appointed Dr. John H. Teacher pathologist to the infirmary. Dr. Teacher, amongst other appointments since graduation, has held the posts of under-curator of the anatomical and pathological departments of the Hunterian Museum, assistant pathologist at the Western Infirmary, and pathologist to the Royal Hospital for Sick Children, Glasgow.

Post-Graduate Courses at the Royal Infirmary, Glasgow.

The post-graduate courses at the Royal Infirmary for the summer session will commence on May 3rd. It will facilitate arrangements if any desirous of joining any of these classes will communicate with Dr. J. M. Thom, superintendent, who will supply any further information.

Treatment of Pulmonary Tuberculosis in Glasgow.

At a recent meeting of the Glasgow parish council a discussion took place upon the treatment of phthisical cases, with the object of preventing the spread of consumption in Glasgow. It was stated that the corporation was not doing its duty in the matter in adopting the principle of notifying consumption under the Notification of Diseases Act without carrying the principle into action. It was decided to remit to the Relief Appeal Committee to consider applications for relief that have been made from phthisical cases, which are not legally entitled to relief, and to draw the attention of the Local Government Board to the matter. It has been stated by one of the corporation committees that to put the notification in force as desired by the parish council would put an extra 1*s.* or 1*s.* 4*d.* per £ on the rates; that the capital cost would be something like £250,000; and that at least 3000 persons would require active treatment. The parish council had no means of checking these figures, but in its opinion the spread of the disease should be checked by treating the patients in the most approved manner whenever the disease was discovered. This means that cases which are not legally entitled to relief, such as patients who at the time of the discovery of the disease are practically able-bodied, must be treated.

The Municipalisation of the Sidlaw Sanatorium.

The municipalisation of the Sidlaw Sanatorium is still the all-absorbing topic of conversation in Dundee and to all appearance the question is as far from being settled as ever. At a meeting of the council, specially convened to consider the Provisional Order to obtain powers to levy a special rate for the maintenance of Sidlaw Sanatorium, payable equally by owners and occupiers, the adoption of the Order was carried by 13 votes to 9 for the previous question. At this meeting the Lord Provost read a telegram which had been received from the Local Government Board, stating, "In view of numerous important representations against the scheme the Board cannot, without further consideration, give their statutory sanction to the proposed transfer at present." A meeting of representatives of the various public bodies opposing the scheme has also been held, when arrangements were made for taking active steps to prevent the transference of the institution to the town council becoming effective till more is known about it. Delegates from the Harbour Trust, Chamber of Commerce, Citizens' Union, House Factors' Association, and the inhabitants of Auchterhouse and district were present; and it was agreed that the Local Government Board should be asked to receive a deputation and also that a committee be appointed to consider what court proceedings should be started. On April 19th a public meeting convened by the Lord Provost was held in the Kinnaird Hall to afford an opportunity for the citizens of Dundee to express their opinion on the question. A large staff of police was on duty to preserve order. After the Lord Provost had explained the subject from the town council point of view Professor D. MacEwan moved the following resolution:—

> That it is desirable in the interests of the public health of the community of this city that the town council proposal to municipalise the Sidlaw Sanatorium be adopted, having special reference to the proved efficacy of sanatoria treatment and the educative influences thereby secured.

Dr. J. Mackie Whyte seconded. It was moved as an amendment that the matter be referred forthwith by the town council to the decision of the electors by means of a plebiscite. After a scene of great disorder the Lord Provost brought the proceedings to a close by leaving the chair without any decision having been arrived at. The Citizens' Union has issued a circular to the ratepayers pointing out, among other things, how the cost will cripple industries and demanding a plebiscite.

Additions to the Victoria Hospital, Dundee.

Important extensions to the Dundee Victoria Hospital are about to be made. Recently the laundry of the establishment was destroyed by fire. Plans for the making good of the damage were submitted at a meeting of the executive committee on April 23rd. These provide for the erection of a new washhouse, divided into two entirely separate compartments, one for patients and the other for the staff, each with its own washing machines. A boiler steam-engine is also to be installed, and the portion destroyed is to be renewed and a common laundry provided. The total cost is to be about £2000.

Aberdeen Sanitation: Annual Report.

The report of the sanitary inspector of Aberdeen for the year ending December last has just been issued. Favourable comment is made on the work of the two health visitors, and the suggestion is offered that it might be worth considering whether a third lady should be appointed to devote her time entirely to the question of cleanliness in the houses of the people. During the year the public health committee resolved to recommend to the council that notices should be supplied to all the principal workshops and factories in the city in regard to the danger of spitting, and the council having agreed to this recommendation there were 525 such notices issued and in every case the persons in charge of the works were willing to have the notices exhibited in their premises. There were in all 1334 cases of infectious disease removed to, or treated in, the hospitals of the city, 2451

cases supervised at home, and 11,252 visits of inquiry made in connexion with all the cases reported.

Presentation to Dr. T. A. Sellar of Aberlour.

Dr. T. A. Sellar of Aberlour has been presented with a motor-car by the inhabitants of Aberlour and district and by others residing at a distance. The movement was entered into with the utmost enthusiasm and a larger sum than that aimed at—£400—was subscribed, the additional subscriptions being returned. The car is a Mors car, 12–15, R.A.C., rating 15–9, single landaulette, and in addition Dr. Sellar was presented with a list of the subscribers, an insurance policy for one year, and a deposit receipt for £35. The chairman, in making the presentation, remarked on the size of the district served by Dr. Sellar and on the esteem in which he was held throughout it. Dr. Sellar suitably acknowledged the presentation and also that of a rug sent by Dr. W. Skinner, Ballindalloch. The meeting was characterised by great heartiness and proved the appreciation of Dr. Sellar's services to the district.

April 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Post-Graduate Classes at Trinity College, Dublin.

FOLLOWING the precedent of last year, arrangements have been made for both summer and autumn post-graduate courses at Trinity College, Dublin. The duration of each course will be three weeks, the hours of which will be fully occupied, the working day being from 8.30 A.M. until 6 P.M. The syllabus includes a lecture by Sir C. B. Ball, the Regius professor of surgery on Cancer of the Rectum, to which he has devoted special attention. The course in physiology has been extended and now includes lectures on the absorption and elimination of protein bodies and practical work in the laboratory for three hours each week on urinary analysis. As in former years, arrangements have been made by which a limited number of members of the class can reside in College rooms and dine on Commons for a very moderate sum.

The Anti-Tuberculosis Crusade.

The professional event of the past week in Dublin was the Anti-Tuberculosis Exhibition in the Rotunda buildings for five successive days. The arrangement formulated on the original programme was for three days only, but the appreciation of over 60,000 visitors elicited the decision of the authorities to continue the exhibition to the end of the week, and the interest of the public fully justified the movement. The impression made upon the public and upon highly qualified critics among them was most favourable. The amount of material displayed for the purpose of education was large in quantity and excellent in quality. Hardly a conceivable specimen was omitted—from the model of a byre erected in the Rotunda Gardens, in which was housed a tuberculous cow, to the microbic colonies of caseation of the various tissues and organs which were exhibited in the Pathological Section under the direction of Professor E. J. McWeeney. Good coloured pictures of the tubercle bacilli in characteristic conditions of location and grouping were prepared by Dr. C. L. Birmingham of Westport. An excellent series of charts, maps, and diagrams were on view in the Pillar Room, under the charge of the Registrar-General (Sir Robert Matheson), which supplied full and up-to-date statistical information on the distribution and mortality of tuberculosis (among other important infectious diseases) in Ireland. There were models of labourers' cottages which had been lent to the exhibition by the Local Government Board, and a complete collection of the most recent disinfecting agents, apparatus, and appliances, which had been supplied by the corporation. There was a sun-box designed by Mr. Finegan, L.R.C.S.I., and chalets which were constructed by Messrs. Keenan and Sons. In the Veterinary Section were displayed some typical specimens of tuberculous disease. In the section devoted to air and ventilation Mr. G. Fletcher had brought together an interesting and instructive collection of charts and models illustrative of the value of fresh air and proper appliances for ventilation in the prevention and cure of disease. The pair of "contrast houses," which were arranged by Mrs. Rushton, formed a strikingly effective object lesson. Here were displayed two bedrooms which had been furnished at the same expense with the object of showing a diagrammatic contrast between the cleanliness, cheery lightness, and neatness of arrangement of the furniture of one, and the sombre depression and helpless untidiness suggested by the careless and ill-judged (dis-)arrangement of the corresponding items in the other apartment. In appropriate proximity to this section was displayed a protective screen which had been supplied by Messrs. Smith and Sheppard, and was made to invest completely the bed of a tuberculous patient and thereby to act as a preventive against contagion. The Domestic Science Section, which was under the charge of Miss Fletcher, and the Milk Section, which was under the control of Miss McNeill and Dr. J. Lumsden, were also amongst the most successful attractions of the exhibition. In the Pillar Room during the exhibition the large central table was loaded with pamphlets and leaflets for free distribution.

The Medical Officer of Health of Belfast.

At a meeting of the public health committee of the city of Belfast held on April 22nd the following communication was read from the secretary to the Local Government Board for Ireland:—

With reference to your letter of the 26th ult. relative to the resolution of the Belfast corporation increasing the salary of the medical officer of health from £600 to £800 by four annual increments of £50, I am directed by the Local Government Board to remind the corporation that after Dr. Whitaker's resignation in 1906 the Board strongly urged the corporation to fix a salary which would induce candidates to come forward possessing high qualifications and extensive practical experience in the sanitary administration of a large city. Notwithstanding the Board's representations and the recommendations of the Public Health Committee, the corporation adhered to their decision to fix £600 a year as the remuneration of the medical superintendent officer of health, and consequently appointed a gentleman who had only within the preceding year obtained the prescribed diploma in public health, and had not the advantage of previous training in sanitary administration. The Board cannot lose sight of the fact that the corporation, after full deliberation, less than three years ago, assigned £600 as the remuneration for the work, and that Dr. Ballie accepted office on these terms, and, having regard to their usual practice of declining to consider proposals to increase salaries until five years have elapsed after the appointment, on the ground that the fixing of a low initial salary would tend to limit competition and discourage eligible candidates, they feel unable to concur in the present proposal of the corporation.

A resolution was passed by the committee protesting against the action of the Local Government Board.

Scarlet Fever in Lurgan.

A widespread epidemic of scarlet fever has broken out in the Blough district of Lurgan. The type so far is mild, but as reported on April 19th to the urban council 46 cases have occurred, with two fatalities. Its spread was attributed by Dr. S. Agnew, medical officer of health, to the giving out of home work from one or two factories. In some of the homes disinfected they found bundles of handkerchiefs, and as the children went to and from the offices daily with such bundles every facility was given for spreading the disease. There is also a suspicion that the epidemic may be a milk one.

Royal University of Ireland.

Dr. John Campbell of Belfast has been re-elected a member of the Senate (a representative of Convocation) of the Royal University of Ireland. He had 272 votes to 94 polled for Dr. E. Magennis of Dublin.

April 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Getting up After Laparotomy and Labour.

AT a recent meeting of the Society of Medicine M. Lance discussed this question, which at the present time is a matter of debate on all sides. For the last dozen years surgeons, both in Germany and America, have advised that cases of laparotomy should be got up early. M. Lance undertook an inquiry as to the actual practice of French surgeons, both in Paris and the provinces, and reported to the meeting the results of his inquiry bearing on the indications both for and against this method. It would seem that in the majority of cases the ordinary stay in bed can be considerably shortened with profit to the patient, given certain conditions and modifications in the method of operating and of dressing. M. Theuveny considered that as regards the getting up of a patient after labour, the condition

of involution of the uterus and the lochial discharge must be taken into consideration. No absolute rule can be laid down, for patients who had had many children, patients who had been delivered of twins, patients who were suffering from infection and who had had a very tedious labour followed by uterine subinvolution, ought to be kept in bed for some time, while, on the other hand, the patient whose uterus had sunk behind the pubes and whose lochial flow had stopped within nine days could then get up without danger. Getting up on the third or fourth day after labour was in M. Theuveny's view very imprudent. M. Cazin said that no definite rule could be laid down as to the getting up of a laparotomy patient; in the case of a patient who had undergone an operation for fibromyoma one could not be too careful. M. Dartigues said that M. Lance had been quite right in bringing up the question before the society, for it was one which was of interest at the same time to physicians, surgeons, and accoucheurs.

Some Cases of Œsophagoscopy and of Tracheoscopy.

At a meeting of the Society of Œsophagoscopy and Tracheoscopy, held on April 8th, M. Guisez showed sundry patients in whom œsophagoscopy had rendered great services from a diagnostic and therapeutic point of view. One case was that of an œsophageal stenosis apparently arising from no definite cause. The stenosis was near the cardiac end of the œsophagus and the history of the patient gave reason for supposing that the cause of it was a simple ulcer which had cicatrised. Œsophagoscopy confirmed this idea and allowed the stricture to be dilated until the calibre of the œsophagus was at the normal. In another case a dilatation of the aorta was diagnosed both by tracheoscopy and œsophagoscopy. This case was remarkable, for it was the first in which endoscopy afforded a diagnosis, the clinical signs being negative. Two other cases were those of foreign bodies in the œsophagus which were removed by the aid of œsophagoscopy, one being some false teeth and the other a piece of chicken-bone. In this last a portion of the wall of the œsophagus had sloughed, but the patient recovered without any bad symptoms.

The Treatment of Tuberculosis by Tuberculin.

At a recent meeting of the Academy of Sciences Professor Bouchard read, on behalf of Dr. Mantoux of Cannes, a note on the treatment of tuberculosis by tuberculin. This drug has given good results in a number of cases, but its employment is one of extreme delicacy which has militated against the more general use of the method. Dr. Mantoux injects the tuberculin, not under the skin, as has been the custom up to now, but into the thickness of the skin. It there produces a wheal (*tache*), the appearance and dimensions of which are, he considers, an accurate guide to the physician in the administration of this drug. The dose in this way can be graduated, he believes, exactly according to the temperament of the patient and can be increased in proportion to his resistance without fear of any untoward circumstance.

April 26th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Balneological Association.

THE German Balneological Association recently held its annual meeting in Berlin, Professor Brieger being in the chair.

Dr. Schmidt of Halle read a paper on Diarrhœa, in which he said that the principal feature of this condition was not the increase of peristaltic movement, but a putrid discharge from the intestinal mucosa. Concerning the therapeutic measures apart from a suitable diet, opiates, astringents, and disinfecting compounds might be prescribed. The opiates and astringent compounds, however, have only a symptomatic action, whilst the disinfecting compounds have an action upon the cause of diarrhœa—namely, the septic condition. The best remedy was peroxide of hydrogen, which even in small doses was bactericidal.

Professor Kutner of Berlin read a paper on Dietetic "Cures," especially on over- and under-feeding. In adults, overfeeding was prescribed in anæmia, nervous diseases, in convalescence, and in commencing tuberculosis, but good results were obtained only when the digestive organs were healthy. The individual patient required an individual cure, and it was of importance to ascertain his tolerance for fat and carbohydrates. Some patients felt better with absolute rest in bed; other patients required some exercise. The routine prescription of the Weir-Mitchell method was therefore not satisfactory and must be avoided lest it should produce obesity. Still more precaution was required in underfeeding, and a too rapid application of this method was injurious because it might produce nephritis. Muscular work should always be prescribed. Dr. Pariser of Homburg said that constitutional obesity must be differentiated from obesity produced by overfeeding. Constitutional obesity was thyreogenic, and hypertrophy of the thyroid gland was always present. The diagnosis of constitutional obesity should not be made before it had been proved that the condition was not influenced by dietetic measures; in these cases the administration of thyroid preparations was advisable, but not in cases of overfeeding.

Dr. Determann of St. Blasien had made experiments on the Viscosity of the Blood in vegetarians and non-vegetarians, of each category in five cases. He found that the viscosity was greater in vegetarians; the principal cause of the viscosity was the globulin, whilst the sugar and the salts were without importance. He then administered in different periods a food containing much and little albumin, much and little fat respectively, and found that the food had only a small influence on the viscosity, but that the latter depended on the quantity of hæmoglobin.

Dr. Gottschalk of Berlin spoke on Balneotherapy and Menstruation. He pointed out that drinking "cures" might be continued during menstruation, although they might sometimes increase the blood pressure; bathing "cures," however, should always be interrupted, first because the water might contain germs which might eventually enter into the vagina and find there a good medium for growth in the discharged blood. The bactericidal action of the blood in the vagina was, moreover, decreased and the aperture of the cervix opened, so that an infection might easily happen. Mud baths should never be administered for hæmorrhage due to myomata. During menstruation the normal blood pressure decreased and it should not be artificially increased by bathing.

Dr. Schreiber of Konigsberger read a paper on Accidental Albuminuria. He had observed that palpation of the abdomen caused a temporary albuminuria in a person with atonic abdominal walls. He found the same symptom in many other people. Probably it was caused by irregularity of the renal circulation. In the discussion, Professor Brieger observed that more caution should be taken in palpating the abdomen. He had found by experiments on animals that pressure on the aorta not only caused albuminuria but also degeneration of the spinal cord. Dr. Pariser was of opinion that the albuminuria might be due to arteriosclerosis. Massage of the abdomen, which was the strongest form of palpation, had, in his numerous cases, never caused albuminuria.

Dr. Engelmann of Kreuznach discussed the Radio-active Substances in the Kreuznach springs. They were present in, and were obtained by, chemical proceedings from "sinter"—i.e., residues—of which every year large quantities were produced. The radio-active emanations had been used in rheumatism, neuralgia, and sciatica, and lately in the Cancer Institute of Heidelberg by Professor von Czerny. In the discussion, Dr. Fürstenberg of Berlin said that the emanations did not penetrate through the intact skin, and that the effect of radio-active baths was therefore rather small. Radio-active waters were, according to him, most efficacious when given orally or by inhalation.

Professor Strauss of Berlin discussed the question of the Influence of Drinking Cures on the Blood Pressure. He had ascertained by experiments in numerous cases that the administration of water did not increase the blood pressure. 500 grammes of water had increased it slightly only in very sensitive patients, the increase being, however, not greater than that produced, for instance, by mastication. The administration of fluid was thus not at all harmful. In diseases of the kidney, where the increase of blood pressure was caused by the retention of nitrogenous productions of the metabolism, a drinking treatment might eventually have a curative effect by removing those toxic productions. It was not yet ascertained whether the blood pressure decreased by the administration of purgative waters.

Dr. Schuster of Aix-la-Chapelle reported the results obtained in Syphilis by the combination of the Aix-la-Chapelle sulphur springs with the administration of mercury. It had been alleged that this combination might eventually produce sulphate of mercury, which was inert. This opinion was, however, erroneous. Dr. Schuster succeeded in proving by quantitative analysis that during a "combined" cure of from five to six weeks the daily discharge of mercury was 6–7 milligrammes. After seven weeks it was 3–3·5 milligrammes, and after four months not more than 2 milligrammes were present in the urine. Dr. Schuster concluded that the combined cure was efficacious because the mercury was as easily absorbed as discharged, because the mercury was retained within the circulation for an adequate time, and because the Aix-la-Chapelle waters, owing to their amount of sulphur and of chloride of sodium, had themselves a curative effect on syphilis.

Dr. Fürstenberg read a paper on the Hydropathic Treatment of Neurasthenia. He said that the essential thing was to administer exact doses, and that therefore a thorough knowledge of hydropathic technique was necessary. It was a common fault for inexperienced medical men to prescribe too strong or too many applications. For proper treatment care must be taken to ascertain whether the patient offered more symptoms of irritation or of depression. In both cases the "cure" should be begun with local applications which were of very mild action. Afterwards general bathing, sponge baths, or half baths might be prescribed. In cases of nervous irritation packing or protracted "indifferent" baths were advisable. In sanatoriums other means such as fan-douches of changing temperature might be applied. Dr. Fürstenberg then gave prescriptions for the treatment of the local symptoms of neurasthenia, such as insomnia, headache, sexual irritation, &c., but pointed out that every case required individual treatment.

Dr. Frankenhäusen of Berlin discussed the Training of Students in Balneology in the German Universities. He regretted to-day that the German universities had hitherto somewhat neglected the training of students in this branch of medicine, the result being that the overwhelming majority of young medical men begin practice without having any knowledge of health resorts and watering-places. This was a great drawback, as nowadays a medical man might be compelled to prescribe balneological or climatological treatment. Dr. Frankenhäusen made some proposals for improving this undesirable state of things; he recommended that balneology should be a subject of examination in the State examination, that balneological institutes should be established at the universities, and that excursions of the students should be arranged to the most important watering-places under the guidance of the clinical teachers.

Other papers read before this Congress concerned the Blood Pressure in Arterio-sclerosis by Dr. Kisch of Marienbad, Health Resorts on the Seaside by Dr. Haeberlin of Wyk, Hygiene of Health Resorts by Dr. Sarason of Berlin, and Balneotherapy in Childhood by Dr. Hirsch of Kudowa.

April 24th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Country Places and Infectious Diseases.

As the time is now fast approaching when the higher and middle classes of the city's population are beginning to remove to country places on the upper part of the Bosphorus or on the so-called Prince's Islands in the Ismid Gulf of the Sea of Marmora, the serious attention of the medical authorities and the public is drawn to the fact that a great many of these places are very unsatisfactory from a sanitary and hygienic point of view. Some medical men who seem to know the prevailing conditions and circumstances, and who have given the matter proper consideration and made careful investigations, maintain that a good number of people who leave the narrow, dirty, and dusty streets of the city in order to enjoy the bright sunshine and the pure air of country places frequently return in a worse state of health than that they have been in previously to their removal. The reasons assigned to account for this regrettable fact are manifold. To begin with, almost all the houses on the Upper Bosphorus and the Marmora Sea are built of wood without any consideration as to the comfort or well-being of the people. Besides, the streets there are in many places so narrow that the balconies of opposite dwellings almost touch one another. Whereas in the city wherever a case of acute or chronic infectious or contagious disease is recognised the dwelling and clothing and furniture are disinfected under more or less efficient medical supervision, this disinfection is almost never carried out in country places, which have no organised medical service. It is said by a medical authority that on the Prince's Islands there is scarcely a house that has not been inhabited by a phthisical patient. In spite of that, these houses have never received a medical visitor for purposes of disinfection. The hope is expressed that the medical authorities will take the necessary measures to remedy this state of affairs, which is so dangerous to the public health.

Cerebro-spinal Meningitis.

Dr. J. B. Violi, a recognised authority here on children's diseases, thinks that the cerebro-spinal meningitis which has been epidemic of late in Northern Europe, in Switzerland, and in Italy is beginning to spread also in the Turkish metropolis. For many years past there have been only sporadic cases of this malady here and there, all strictly localised. At the end of February, 1907—i.e., soon after the European epidemic—the disease began to spread on the banks of the Bosphorus and the Golden Horn in an alarming manner. Dr. Violi does not think, however, that cerebro-spinal meningitis has come to Constantinople from Western Europe. He expresses the view that the disease originated in the Turkish metropolis and that the conditions are much more favourable to it now than they were in former years. In 1907 it reached its maximum intensity during the months of April, May, and June; it diminished in July and August, and disappeared in the autumn. In 1908 it reappeared at the end of February with the same progression and decline as in the previous year, and with the sole difference that fewer adult people were affected by it. This year it began again to manifest itself in the same month of February and is now seen in an epidemic form among the children. Dr. Violi advises parents not to be over anxious, as the present disorder, he thinks, is not of a severe type, is not likely to propagate itself extensively, and does not resemble the epidemics in western and southern Europe. The mortality figures as given by the Conseil de Santé show that in 1907 22 persons died from cerebro-spinal meningitis. In 1908, of the 250 cases 25 succumbed. These figures do not include the numbers of patients who died from tuberculous meningitis. Of the various remedies used Dr. Violi found that the injections of the anti-meningococcic serum of Merck (in repeated doses of 10 cubic centimetres) gave the most satisfactory results. The injections of collargol and Rodmann's methods did not come up to expectation. Five patients treated with Merck's serum rapidly recovered.

The Political Disturbances.

All sorts of rumours are abroad in the city and everybody is in a state of great anxiety and apprehension. It is felt that something decisive will happen soon and fear is felt that renewed bloodshed is unavoidable. The opinion is expressed on all sides that so long as the present Sultan, Abdul Hamid, remains there will be no end to the trouble. But the young constitutional party know two things well—the one is that a religious outburst of a magnitude that cannot be gauged might follow the time-honoured method of dealing in the East with a fallen sovereign, while Europe expects the party of regeneration not to look back for their models to blood-stained pages of history.

April 23rd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Plague.

PLAGUE has not failed to reappear in Sydney as usual in the autumn and the present outlook is disquieting. The first case registered was that of a seaman on the French steamer *St. Louis* which trades between Sydney and Noumea. Almost simultaneously an employee in a city flour mill was found to be suffering from the same disease. A day later the proprietor of this establishment and his

brother were removed to the Coast Hospital and both died a few hours later. An examination of the flour mill revealed the fact that upwards of 250 rats were lying dead from plague amidst a heap of rubbish. The Lord Mayor has called for strict inquiry into the conduct of the officials responsible for the inspection of these premises. Another case is also registered from the steamer *St. Louis*. It was supposed that Sydney was originally infected from Noumea, but the evidence each year goes to show that the infection is slowly spreading from the wharves to the inner suburbs. Dr. T. W. Sinclair, the acting city health officer, admits that some of the foreshore is in a very bad state. Plague is also reported from Banbury, a small port in the North of Western Australia, where an outbreak occurred in the crew of a steamer from Singapore.

The Medical Inspection of School Children.

The Government of South Australia has appointed Dr. R. S. Rogers as medical inspector of school children and will formulate a scheme of its own. At the Premiers' conference of 1908 action was delayed pending an agreement for a scheme among the various States on uniform lines. Nothing has been done and South Australia declines to wait any longer. School inspection has been carried out in Tasmania and New South Wales for the past two years, but no general plan is followed.

Presentation to a Surgeon.

Mr. G. A. Syme, M.S. Melb., F.R.C.S. Eng., who is leaving for a holiday trip to Europe, was entertained at dinner by the members of the Victorian Police Force on March 19th. Mr. Syme has held the position of surgeon to the Victorian police for many years and has earned the esteem of all ranks. The presentation consisted of an illuminated address and a smoker's companion, while Mrs. Syme received a handsomely fitted travelling case. Mr. Syme has also been entertained by the medical profession at a farewell dinner.

A Proposed New Clinical School.

Application has been made to the Faculty of Medicine in the Melbourne University for the recognition of St. Vincent's Hospital as a clinical school. St. Vincent's is the most recently built hospital in Melbourne and is managed by a nursing sisterhood of the Roman Catholic Church. At present about 120 patients are accommodated and the appointments are admirable as far as ward and theatre equipment are concerned. The Faculty has appointed a subcommittee to report on the matter and appears sympathetic, although the facilities for pathological investigation will have to be improved before the request can be entertained. Hitherto the Melbourne Hospital has been practically the only clinical school for general teaching available for University students. The Alfred Hospital has sufficient facilities and is recognised, but is too far away to be of much service. St. Vincent's is as near the University as the Melbourne Hospital and has a very large out-patient department with all the usual special subdivisions.

Fever Hospital Accommodation in Melbourne.

Attention has lately been drawn in the public press to the inadequate hospital accommodation for infectious diseases in Melbourne. There is only one hospital specially set apart for such purposes, and it can only receive diphtheria and scarlet fever patients. The construction and management of this institution have been characterised as faulty. It possesses only two wards and hitherto has been without an observation block, though this is being added. It is not a charitable institution, being in reality a municipal hospital managed by a few of the metropolitan municipalities, who will not admit patients from other municipalities under a charge of 7*s.* 6*d.* per diem, which, moreover, must be guaranteed. The Government contributes half the upkeep but has no representation in the management. There is ward accommodation for about 60 patients. Recently a mild epidemic of scarlet fever has appeared in Melbourne and the accommodation of the hospital has been greatly overtaxed, a number of patients having to be treated in tents erected in the hospital grounds.

A Useful Career.

Mr. T. H. Lovegrove, chairman of the Board of Public Health and Chief Government Medical Officer for Western Australia, will shortly retire owing to advancing years. Mr. Lovegrove arrived in Western Australia in the very early days and has been continuously in the Government service ever since. He has done a vast amount of valuable organisation in public health work and hospital administration. He introduced female nurses into the Perth Hospital against a fierce storm of press and public opposition. He has always been a highly popular public servant and possessed the confidence of every Government throughout the many changes of administration that Western Australia has experienced in the last 30 or 40 years.

Care of Inebriates.

The Government of Victoria some time ago opened an inebriate retreat at Lara, near Melbourne, and objection has recently been made by a prominent temperance advocate that admission appeared only to be for a favoured few. Replying to these statements Mr. Ernest Jones, Inspector-General of Insane, insists that the retreat is only for voluntary patients and is in no sense custodial. Of 97 patients admitted between July, 1907, and December, 1908, 30 were received without payment, 42 paid £1 per week or less, and only 14 had paid full cost of maintenance. Admission therefore does not depend on ability to pay fees. "Our endeavour throughout," says Mr. Jones, "has been to obtain and cure those patients who are deserving of assistance and treatment and who are likely to benefit by their stay at Lara. Practically only those who make voluntary application are likely to benefit by their stay in such an institution; those who are sent there compulsorily are rarely likely to do any good and for such characters a farm colony is probably the only solution of the difficulty. But such a colony must also be custodial; it would be impossible to give to such patients the liberty which is allowed at Lara. There is accommodation for 50 male patients and we have only about 20. There are immense possibilities for doing excellent work at the institution and, I take it, it is only with the coöperation of the temperance societies that it can be made a success. We have no authority to go out and collect patients but we are always ready to receive and care for those brought to us, provided they are suitable cases for treatment in a remedial institution as opposed to a custodial one."

March 23rd.

Obituary.

SIMEON SNELL, F.R.C.S. EDIN., D.SC. SHEFFIELD,

PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION; OPHTHALMIC SURGEON TO THE SHEFFIELD ROYAL INFIRMARY; PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF SHEFFIELD.

Simeon Snell, who died on April 17th during his term of office as President of the British Medical Association, was, as many of our readers will remember, in somewhat failing health during the meeting of the Association which was held at Sheffield last year, and in fact was unable to undertake the whole of his arduous duties. After the meeting he took a long holiday and on his return to work found it necessary to give up many of his numerous engagements. Some eight or nine weeks ago, however, he had to take to his bed, and although he improved about a week before his death the improvement was only temporary and he died, apparently from heart failure, while asleep, the primary cause of death being arterio-sclerosis.

Mr. Snell was born in 1851, the son of a medical man. He received his medical education at Leeds, Guy's Hospital, and the Royal London Ophthalmic Hospital, Moorfields. He qualified M.R.C.S. Eng. in 1872 and L.R.C.P. Lond. in the following year. In 1892 he became a Fellow of the Royal College of Surgeons of Edinburgh. He settled in Sheffield in 1874, and in 1876 was appointed ophthalmic surgeon to the Sheffield Royal Infirmary, a post which he held to the day of his death. We have received the following interesting particulars from Mr. T. Pridgin Teale upon Simeon Snell's career at this juncture: "Somewhere about the year 1869 a father brought three sons to enter them for the surgical practice at the Leeds Infirmary. The eldest, Enoch, is in practice at Nottingham. The second, John, died a short time ago at Gargrave in Yorkshire. The third, Simeon, is the one whose recent death in the height of his fame we are now deploring. About the time of his obtaining his diploma he acted as my private clinical assistant, and thus his interest and attention were directed towards ophthalmic science, an interest which was

confirmed and intensified by his subsequent attendance at Moorfields and his association with Sir William Bowman. When the time arrived for his settling down in practice he became a partner with a family practitioner in Sheffield, being attracted to the partnership by the fact that the gentleman had a considerable ophthalmic *clientèle* and was at the time the chief ophthalmic surgeon in Sheffield. This gave him his opportunity, fresh as he was from Moorfields and inspired by all the latest developments of ophthalmic science. How from such a basis he rapidly acquired a leading position in the town, and eventually in the Sheffield Infirmary, everyone knows. Clear-headed, accurate, and enthusiastic, he was keenly alive to all advances and improvements in ophthalmology, whether in this country or in foreign lands." Snell at once began to take a deep interest in the Sheffield Medical School and was an energetic advocate of the University of Sheffield scheme. When this ideal was realised and the Sheffield Medical School became the Medical Faculty of the University, Snell was elected Professor of Ophthalmology and was also given a seat on the Council. His studies in ophthalmology naturally enough chiefly related to those diseases and affections of the eye which are brought about by industrial conditions, and he wrote the article on Eye Diseases and Eye Accidents in Relation to Industrial Occupations which formed part of the treatise on "Dangerous Trades" which was edited and published by Dr. (now Sir) Thomas Oliver in 1902.

In 1908 Snell received the well-deserved honour of election as President of the British Medical Association when it met at Sheffield. In his admirable Presidential Address he dealt with Sheffield as having been the "cradle of the study of industrial diseases." After giving a short account of those Sheffield medical men who had studied and reported upon various industrial diseases, especially those incident to grinders, he passed on to consider those industrial diseases which came before him more prominently in his capacity of ophthalmic surgeon. The class of disease which preeminently affects grinders is, of course, pulmonary disease, but eye injuries from dust and pieces of steel are also common. Many of our readers will remember the pictures given of Sheffield trades and of the workman who had a reputation among his fellows for removing foreign bodies from the eye, which Charles Reade gives in his novel, "Put Yourself in His Place." Snell in his address divided the affections and diseases of the eye which he had an opportunity of studying, under four heads: (1) diseases due to occupations involving prolonged use or excessive strain of the eyes and their muscles, such as nystagmus in coal miners and in other employments; (2) those due to occupations which involve the use of certain poisonous substances, such as di-nitro-benzol, used in making explosives, and of bisulphide of carbon, and others; (3) a consideration of the effects on the eye of occupations involving exposure to excessive light or heat or both, such as burnishers, steel smelters, electric welders, bottle makers, &c.; and (4) injuries or accidents amongst grinders, iron and steel workers, coal miners, &c.[1] The remainder of his address was mainly taken up with an account of miners' nystagmus, in which he showed how easily this complaint might become a source of danger. The duty of ascertaining whether or no the air in a mine is safe—i.e., free from explosive gases, depends upon men called deputies who go about the mine and estimate the amount of gas in the air. This is done by turning down the flame of the safety lamp until it practically ceases to be luminous, when if gas is present the flame is capped by a pale blue flame above the lamp flame. Snell made a series of exhaustive tests and found that miners afflicted with nystagmus could not see this cap until it attained a size which showed that a dangerous amount of gas was present. The bearing of this upon the safety of the mine and the men therein is obvious. At this meeting the Council of the British Medical Association conferred the Middlemore medal upon their President for his distinguished services to ophthalmology, and last year also the University of Sheffield gave him the degree of D.Sc. In addition to carrying on a large private practice, arduous hospital work, and teaching, Snell found time to write a good many books upon the diseases of, and accidents to, the eye, although he contributed but little to the medical journals. Outside his purely professional life he took great interest in education, and he served for many years as honorary secretary of the Sheffield Literary and Philosophical Society. In 1893 his secretaryship was interrupted by his being elected President, but at the end of his year of office he resumed his former post. In 1897 he was made a justice of the peace. The funeral took place on April 21st at Fulwood Cemetery.

Mr. Sinclair White, senior surgeon to the Sheffield Royal Infirmary, writes to us as follows: "The death of our colleague is a great loss to the infirmary—how great only those who were privileged to work with him can fully appreciate. For 32 years he gave lovingly and unsparingly of his valuable time and skill to the suffering poor who sought his aid, and the very commodious waiting-hall of the out-patient department was often filled to overflowing by his patients. He was a man of extraordinary energy, great courage, and transparent honesty of purpose. Anything he undertook was sure to succeed, if success was possible. An exceedingly busy man, he got through an amount of work which to many would appear incredible. This was achieved by virtue of the faculty he possessed of doing most things outright and at once. He was a man of many parts and contrived to stamp his individuality on everything he did. His ceaseless energy found outlets beyond his professional work, and there are very few Sheffield institutions that have not at one time or another benefited by his help. As an ophthalmic surgeon he took high rank. His numerous and valuable contributions to the literature of his subject gained for him a world-wide reputation. As an operator he had few equals. He appeared instinctively to know the right thing to do and did it with a celerity and delicacy of touch which stamped him as an artist in his specialty. The crowning honour of a strenuous life came less than a year ago when, on the unanimous recommendation of his local *confrères*, he was elected President of the British Medical Association. Although the shadow of his approaching fatal illness was upon him, he threw himself with his accustomed energy into the work of organising the Sheffield meeting, and it was very largely owing to his personality and the loyal coöperation he was able to inspire that the Sheffield Congress proved to be one of the most successful in the history of the Association. The rank and file of the profession found in him an ever-ready champion of their rights and will greatly miss his masterful leadership, while his immediate colleagues mourn the premature removal from their midst of one who embodied staunch loyalty, a kindly spirit, and much wisdom."

[1] THE LANCET, August 1st, 1908, p. 289.

WILLIAM GABRIEL ROCKWOOD, M.D. MADRAS, M.R.C.P. LOND., M.R.C.S. ENG.

THE death is announced, on March 24th, of Dr. W. G. Rockwood, the leading Ceylonese surgeon and a practitioner well known to medical men in this country. Many of our readers will remember him at the meeting of the British Medical Association in Manchester in 1902, which he attended as the delegate of the Ceylon branch of the Association. Dr. Rockwood was born in Jaffna in the north of Ceylon in 1843 and was educated at the Vembadi Boys' School, at the Presidency College at Madras, and at the Madras Medical College. He received the Licence of this College in Medicine and Surgery in 1861 and returned to Ceylon, when he entered the Government medical service, being stationed first at Puttalam and later at Jaffna, Hambautola, and Gampola. In 1867 he was transferred to Colombo as surgeon in charge of the General Hospital there, a post he held until 1883, and was appointed lecturer on surgery, diseases of the eye, and midwifery. In 1872 he graduated M.D. of the University of Madras. In 1884 he came to England to obtain a British qualification and in 1885 became M.R.C.P. Lond. and M.R.C.S. Eng. He then returned to Ceylon and continued his practice, which was largely of a surgical nature. In 1898 he retired from the Government service under the age-limit and that same year was appointed Tamil Member of the Ceylon Legislative Council. In this capacity he attended the coronation in 1902. At the expiration of his term of office he was reappointed for another five years but failing health compelled his retirement in 1906. The funeral took place on March 29th at the General Cemetery, Colombo, the officiant being the Rev. William Henly of St. Michael

and All Angels, Polwatte. There was a very large attendance composed of members of nearly every community in the island.

CHARLES BELL TAYLOR, M.D. EDIN., F.R.C.S. EDIN., M.R.C.S. ENG.

Charles Bell Taylor, who died on April 13th in his eightieth year, was one of the best known ophthalmic surgeons in the Midlands. He was the son of a veterinary surgeon and received his medical education at the University of Edinburgh and in Paris. In 1852 he took the diploma of Member of the Royal College of Surgeons of England, and in 1867 that of Fellow of the Royal College of Surgeons of Edinburgh, having previously graduated as M.D. in 1854. He was for many years surgeon to the Nottingham and Midland Eye Infirmary, and had besides a very extensive private practice. The wide experience which he thereby gained he put to great use on behalf of his fellows in the admirable clinical lectures which he used to deliver at the Nottingham Eye Infirmary. Many of these appeared in our columns between the years 1884 to 1895, one of the most valuable being that which appeared in our first volume for 1887 entitled "Eye Diseases in General Practice." These lectures were models of a simple, clear, and incisive style, and they were further illustrated with careful drawings made and engraved upon wood, for Dr. Taylor never would have a process block of any kind. His manual dexterity was very great; he preferred to operate for cataract without the use of anæsthetics, and till shortly before his death he was in full swing of ophthalmic practice. He was a man of very strong opinions, many of which ran counter to accepted medical tenets, but in all his differences of opinion he showed himself a perfectly fair as well as a very able adversary. By his death the profession loses a skilful exponent of his branch of surgery and a thoroughly able man.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Plimens S. Conner, formerly professor of surgery in the Medical College of Ohio, Cincinnati.—Dr. Rudolf Hang, extraordinary professor of otology in the University of Munich.—Dr. Robert Reyburn, professor of hygiene in the Howard University, Washington.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. A. Hancock (Section I.), London Hospital.
Medicine.—B. A. Keats (Sections I. and II.), St. Bartholomew's Hospital.
Forensic Medicine.—B. A. Keats, St. Bartholomew's Hospital; and S. H. Scott, London Hospital.
Midwifery.—L. Ettinger, C. P. and S., New York; J. A. Koch, Amsterdam; R. Lamort, University of France; B. W. Loewenberg, Berlin; S. H. Scott, London Hospital; and T. A. F. Tyrrell, St. Mary's Hospital.

UNIVERSITY OF LIVERPOOL.—At examinations for the degrees of Bachelor of Medicine and Master of Surgery the following were successful:—

Anatomy and Physiology.—H. el Arculli, F. Dallimore, T. B. Evans, H. V. Forster, Elsie C. Hanson, H. W. Jones, R. Kennon, R. H. Knowles, T. H. Martin, H. Nield, A. L. Oluwole, W. H. Parry, H. Pierce, J. P. Rafter, H. G. Roberts, A. Seddon, and S. N. Wright.
Materia Medica.—G. S. A. Bishop, F. G. F. Browne, D. H. Clarke, P. le F. Nortje, and T. O. Williams.

FINAL EXAMINATION.

Part A.—A. Adams and T. C. Clarke.
Part B.—J. A. Donnellan, A. A. Rees, S. P. Sykes, and S. V. Tinsley.

Diplomas in Public Health have been conferred upon the following:—

C. S. Brewer, H. M. Cargin, Katharine R. Drinkwater, B. T. J. Glover, C. O. Stallybrass, and J. Teare.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the recent examinations of the Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow for the triple qualification L.R.C.P.E., L.R.C.S.E., and L.F.P.S.G., the following candidates passed their respective examinations:—

First Professional Examination.—H. Shaw, A. M. Robertson, W. Laird, M. M'Closkey, and J. J. Kelly.
Second Professional Examination.—W. Millerick, C. S. Owen, A. L. Edwards, J. Macrae, J. A. Hutchinson, F. F. Keravalla, H. R. Macnab, C. Hunter, and A. Caruana.
Third Professional Examination.—H. F. Williams, J. Blackburn, P. Walsh, C. A. O'Driscoll, J. W. Robertson, D. B. Gazdar, W. Browne, E. D. Shroff, F. P. Quirk, N. B. Mehta, W. M. Thomson, R. C. Fuller, and S. N. S. Aizangar.
Final Examination.—D. G. Lindsay, N. B. Mehta, J. M'Call, V. G. Gokhale, H. E. Swan, and I. Pulteney.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Piper has been recognised as *privat-docent* of Physiology.—*Bologna:* Dr. Guido Piccinini has been recognised as *privat-docent* of Materia Medica and Experimental Pharmacology.—*Florence:* Dr. Ambrogio Mori has been recognised as *privat-docent* of Pædiatry.—*Göttingen:* The title of Professor has been granted to Dr. Alfred Pütter, *privat-docent* of Physiology, and to Dr. Heinrich Vogt, of the Senckenberg Institute, Frankfort.—*Naples:* Dr. Emilio Ugo Fittipaldi has been recognised as *privat-docent* of Medical Chemistry.—*New York (College of Physicians and Surgeons):* Dr. William G. MacCallum, professor in the Johns Hopkins University, Baltimore, has been appointed to the chair of Pathological Anatomy in succession to Dr. T. Mitchell Pruden, resigned.—*Padua:* Dr. Carlo Molon has been recognised as *privat-docent* of Medical Pathology; Dr. Carlo Bestin as *privat-docent* of Neurology and Psychiatry; and Dr. Ugo Dall' Acqua as *privat-docent* of Operative Medicine.—*Palermo:* Dr. Gaetano Lodato of Sienna has been appointed Extraordinary Professor of Ophthalmology.—*Parma:* Dr. Giunio Salvi of Sassari has been appointed Extraordinary Professor of Anatomy.—*Rome:* Dr. Carlo De Rossi has been recognised as *privat-docent* of Laryngology and Rhinology.—*Turin:* Dr. Giovanni Marzo has been recognised as *privat-docent* of Psychiatry and Dr. Rodolfo Bressanin as *privat-docent* of Ophthalmology.—*Vienna:* Dr. Samuel Jellinek has been recognised as *privat-docent* of Medicine.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held on April 16th, Dr. F. de Havilland Hall being in the chair. Mr. J. Brindley James, Dr. F. J. Allan, Dr. W. G. Dickinson, Mr. William Thomas, Dr. F. C. Martley, Mr. H. P. Symonds (Oxford), Dr. W. A. Dingle, Dr. W. Knowsley Sibley, Dr. Frederick S. Palmer, Mr. Edward Bartlett, Dr. M. Greenwood, and Dr. J. B. Ball were also present. The records of the spring are, on the whole, satisfactory. As usual at this time of the year the number of sickness claims has been large, but for the most part they have been of short duration, and the total amount disbursed in respect of them is less than in the corresponding period of last year. The committee examined the drafts of the quinquennial valuation and annual report. The business of last year was exceptionally good, and the 12 months' working has for its result a substantial increase both in the number of members and in the financial reserves of the society. The quinquennial valuation report will also be found to be good, and the committee will be enabled to recommend to the members a continuance of the payment of the liberal scale of bonus arranged for in 1904. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

MIDWIVES ACT COMMITTEE.—The tenth meeting of the Departmental Committee appointed by the Lord President of the Council to consider the working of the Midwives Act was held at the Privy Council Office on April 28th, Mr. Almeric W. FitzRoy, the clerk of the Council, presiding. The following witnesses attended and gave evidence:—Miss K. Stephenson, honorary secretary of the Wiltshire County Nursing Association; Miss Lilian Trendell, certified midwife, lately inspector of midwives for the county council and county superintendent of the county Nursing Association in Herefordshire; Mrs. Elizabeth Miles, certified midwife, Hertford; Miss Alice Gregory, certified midwife, honorary secretary and district superintendent of the Home for Mothers and Babies and Training School for

District Midwives, Woolwich, vice-chairman of the London County Council Midwives Act Committee; and Mrs. Messenger, certified midwife, matron of the St. Margaret's Nursing Home, 30, Surrey-square, S.E.

THE CAXTON CONVALESCENT HOME.—The report of the Caxton Convalescent Home at Limpsfield, Surrey, for the year 1908 has just been issued and shows a very successful year's work. The institution was established in 1895 for the benefit of men employed in the printing and allied trades and has for its president Mr. J. Passmore Edwards. During the year under notice 154 men received the benefits of the institution. The total number of patients admitted since 1895 is 1522. The committee draw special attention to the fact that a large number of the patients are certified as recovering from lead poisoning, and urge that all possible precautions should be taken to guard against the danger of metal fumes and the necessity of exercising care in the handling of food during working hours. The depression in the printing and allied trades during 1908 was the principal cause of the diminution in the amount of subscriptions to the institution from several contributing places of business, and an earnest appeal is made for further financial help. The offices of the institution, which is undoubtedly doing good work, are at 33, Chancery-lane, London, W.C., and subscriptions should be sent to the treasurer, Mr. C. W. Bowerman, M.P., at the Union of London and Smith's Bank, Limited, Chancery-lane branch.

DONATIONS AND BEQUESTS.—Lady Margaret Boscawen has raised £1000 by a special appeal for the funds of the Cornwall County Nursing Association.—Under the will of the late Mr. E. Homan of Lyme Regis, Dorset, St. Bartholomew's Hospital will receive £1000 towards the Samaritan Fund, and the Finchley Cottage Hospital will receive a like amount for endowment purposes, as well as £500 towards the Samaritan Fund.—By the will of the late Mr. S. Puckle of Tunbridge Wells, Kent, the Tunbridge Wells General Hospital will receive £5000 as an addition to the present Puckle Endowment Fund for Beds, and the London Hospital will receive £1000.—Under the will of the late Mr. R. Haslam of Burnley, the Victoria Hospital, Burnley, will receive £500 for the endowment of a cot.—The Boys' Surgical Home, Banstead, will receive £500 under the will of the late Miss A. E. Wheeler of London. The testatrix also bequeathed £1000 to the National Hospital for the Paralysed and Epileptic and a similar amount to the Royal Hospital for Incurables, Putney.—At a meeting of the board of the Royal Infirmary, Manchester, on April 27th, it was stated that a donation of £1000 had been received from Miss Marion Mehl of Oakleigh, Alderley Edge, for the purpose of endowing a bed, and also that a legacy of £1000 had been bequeathed by the late Miss Anna Maria Turner of Ash Villa, Sale, for a similar object.

CENTRAL MIDWIVES BOARD.—A meeting of this Board was held at Caxton House, Westminster, on April 22nd, with Dr. F. H. Champneys in the chair. A letter was received from the secretary of the Royal College of Surgeons of England reporting that Mr. Cuthbert Hilton Golding-Bird had been elected to represent the College on the Board in place of Mr. J. Ward Cousins, retired. Letters were further considered from Mr. A. G. R. Foulerton, county medical officer of East Sussex, as to medical practitioners "covering" the practice of midwives, and it was decided that, subject to Mr. Foulerton's consent, the Board should forward the letters (with or without revision by Mr. Foulerton) to the Privy Council, with the object of obtaining an opinion as to whether a certified midwife personally delivering a woman in childbirth is acting as a midwife where a medical practitioner has been engaged to attend the case. Letters were considered from the medical secretary of the British Medical Association as to the supervision of midwives approved for the purpose of undertaking the practical training of pupils. With reference to the first communication received from the medical secretary, the Board approved its secretary's reply explaining the duties of the local supervising authorities in the matter. Concerning the second letter from the medical secretary asking for further details, after a discussion, in which Sir W. Japp Sinclair spoke on the subject of evasion of the rules by institutions, the Board decided that its secretary should reply that the Board would be glad to be put in possession of any specific information of the evasion of the rules. A letter was considered from Dr. J. C. Thresh, county medical officer of Essex, as to the refusal of medical practitioners in a country district of Essex to attend when summoned on the advice of a midwife. The Board decided that Dr. Thresh should be asked to furnish particulars. The following motions were on the agenda in the name of Sir George Fordham:—

That the Privy Council be asked to obtain from the Treasury an advance of a sum sufficient to meet the current expenditure of the Board, after deduction of ordinary receipts, until the proceeds of an apportionment between the councils of the several counties and county boroughs of England and Wales are available.

That the attention of the Privy Council be called to the fact that by the end of June next the Board will be without funds to discharge the duties imposed on it by statute, and be asked to advise as to the course to be pursued by the Board under these circumstances.

Discussion was postponed in the absence of the mover. Dr. Champneys was re-elected chairman and Sir G. Fordham honorary treasurer.

A DRAWING-ROOM meeting will be held by kind permission of the Duke of Westminster at Grosvenor House on Tuesday, May 4th, at 3.15 P.M., for the furtherance of the higher education of women in home science and economics at King's College, Women's Department. H.R.H. the Princess Louise, Duchess of Argyll, has promised to be present. The courses in home science and economics which were opened at King's College (Women's Department) in October last are adapted not only to the needs of women for the efficient management of their homes, but also prepare them to take up positions as inspectors, lecturers in economics and domestic science, county or district councillors, heads of institutions, or organisers of domestic arrangements on a large scale, or to enter upon social work, such as that of settlement workers and health visitors.

WHOLE-MEAL BREAD FOR CHILDREN.—The Bread and Food Reform League has sent a circular letter to the various children's care committees of the London County Council, urging them to follow the example of certain philanthropic associations for supplying dinners for school children which provide bread made from finely ground whole meal, as well as from the old-fashioned household flour, containing 80 per cent. of the grain. The council of the league, which includes a number of eminent medical men, seconds this appeal by a manifesto showing the importance of rendering good bread accessible to children who are not dependent upon charity. We are asked to state that anybody interested in this subject can obtain further information from Miss May Yates, honorary secretary, Bread and Food Reform League, 35, Bloomsbury-square, London, W.C.

THE FACTORY GIRLS' COUNTRY HOLIDAY FUND.—The annual meeting of the Factory Girls' Country Holiday Fund, of which the Princess Christian of Schleswig-Holstein is the patron, will be held at the Mansion House on May 3rd, when the Lord Mayor will preside. The Fund was inaugurated in 1888 with the object of helping factory girls to obtain a yearly holiday away from the surroundings of their daily life and toil. In 1888 39 girls and women were sent away. Last year 5120 female factory employees received the benefits of the institution. Many of these girls and women are bread-winners whose health is of vital importance to their families, and it must also be remembered that as a large proportion of the girls will become the mothers of the succeeding generation their health is of considerable importance to the State. We sympathise fully with the work of this institution, which is deserving of wide support. Donations or annual subscriptions should be sent to the honorary treasurer of the fund, Mr. H. Rendel, 28, Campden Hill-square, W.

LITERARY INTELLIGENCE.—Messrs. Witherby and Co. have in preparation an authoritative work on "The Birds of Kent," by Dr. Norman F. Ticehurst, who has for many years been well known among ornithologists as a close observer of the avifauna of the county. The work will be published by subscription and only a limited edition will be issued.—Mr. H. K. Lewis has in preparation a new book on "Immunity and its Applications in the Diagnosis and Treatment of Infectious Diseases." It is by Dr. D'Este Emery, author of "Clinical Bacteriology and Hæmatology." The book contains a glossary of terms and an extensive bibliography. The lectures delivered at the University of London

in February, 1909, by Dr. Louis C. Parkes, under the trust of the late Sir Edwin Chadwick, are also ready for publication. The official title of the course was "The Medical Aspects of Recent Advances in Hygiene as connected with Sewering," but Dr. Parkes has called the book "House Drainage, Sewerage, and Sewage Disposal in Relation to Health."

ROYAL SANITARY INSTITUTE.—A sessional meeting of the institute will be held in the Parkes Museum on Wednesday, May 12th, at 8 P.M., when a discussion will take place on the Passage of Excreta through House Drains, to be opened by Mr. H. A. Roechling, M. Inst. C.E., F.G.S.

CHELSEA HOSPITAL FOR WOMEN.—By the kind permission of Mary Countess of Ilchester a concert in aid of the Chelsea Hospital for Women will be held in the Garden Ball Room at Holland House, Kensington, on Friday, June 11th, at 3 P.M.

MEDICAL DEFENCE UNION.—The annual general meeting of the Medical Defence Union, Limited, will be held at the medical library, University College, Bristol, by the kind permission of the authorities, on Thursday, May 27th, at 4.30 P.M., when the annual report will be presented and the usual statutory business transacted.

ROYAL INSTITUTION.—On Tuesday next (May 4th) at 3 o'clock Professor Svante Arrhenius, director of the Nobel Institute of Physical Chemistry, Stockholm, will deliver the first of the two Tyndall lectures at the Royal Institution on "Cosmogonical Questions." The Friday evening discourse on May 7th will be delivered by Major Ronald Ross on "The Campaign against Malaria."

RÖNTGEN SOCIETY.—At a meeting of this society to be held on May 6th at 20, Hanover-square, London, W., at 8.15 P.M., Dr. G. H. Rodman will read a paper entitled "An Illustrated Description of the Historical Collection of Tubes Recently Deposited at the Albert and Victoria Museum." This collection of tubes, which is of great interest and contains many unique examples, is now exhibited in two temporary cases in the western gallery of the Victoria and Albert Museum, South Kensington.

UNIVERSITY OF BIRMINGHAM.—A course of three lectures upon "The Essentials of Physiological History" will be delivered by Dr. David Fraser Harris, F.R.S.E., lecturer in physiology, during the summer session, 1909, in the Medical Theatre, at 4 P.M., upon the following dates:—May 6th: The History of Discovery of the Circulation; May 13th: The History of Knowledge of the Respiration; and May 20th: The History of Knowledge of the Nervous System.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—The opening lecture of the summer session at the Children's Hospital, Great Ormond-street, will be delivered on May 6th at 4 P.M. by Dr. F. E. Batten, who will take for his subject "Some Cases of Cerebral Tumour in Children." On May 13th Mr. E. M. Corner will give a demonstration of selected surgical cases, and lectures and demonstrations will be given on every subsequent Thursday at 4 P.M. throughout the session. They will be free to all qualified medical practitioners and the subjects of each will be announced in our medical diary in the issue of the preceding week.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Arterial Drainage and Public Health in Ireland.

THE motion which was brought forward by the Nationalist Members of Parliament on April 22nd with respect to arterial drainage contained a statement that "the floodings by the great rivers and their tributaries in Ireland are causing annual widespread destruction of property, grave and permanent injury to public health, outbreaks of virulent diseases, and are a standing menace to the lives of the people." In urging the Government to pass a measure embodying a comprehensive scheme of arterial drainage several of the Nationalist Members alluded to the prevalence of such diseases as tuberculosis and rheumatism in the districts liable to the flooding of the Bann, the Shannon, the Barrow, and other rivers. These diseases, it was argued, were largely owing to the dampness of the country, and if the country were drained an appreciable diminution would take place in them. Mr. MEEHAN quoted the opinions of several medical officers of dispensary districts to show the difficulty attending the disposal of sewage in localities liable to flooding. This produced a condition of things very detrimental to health in affected localities. The question of arterial drainage schemes was discussed from many other points of view besides that of public health. Mr. BIRRELL, the Chief Secretary to the Lord Lieutenant, treated the question sympathetically, but pointed out the difficulty of financing schemes of arterial drainage, which are of necessity expensive. He even stated that legislation was in the course of preparation. However, he held out no hope that it would be introduced this session. Subsequently the motion brought forward by the Nationalist members was defeated by 97 votes to 80.

Medical Education in Wales.

Nearly two years ago a committee was appointed by the Treasury to inquire into the quality, character, and results of the educational work accomplished by the University of Wales and its constituent colleges, and various cognate matters. To the report of that committee, which is now available to Members of Parliament, is appended a note on the faculty of medicine by Dr. (now Sir) DONALD MACALISTER. He considers that the only one of the University Colleges likely at present to contemplate the complete preparation of students for medical degrees is that of Cardiff. Provision has already been made at it for instruction in the subjects of the first two professional examinations, viz., chemistry, physics, biology, anatomy, and physiology, and to a less extent for late subjects in the curriculum, such as materia medica, bacteriology, vaccination, and hygiene. Sir DONALD MACALISTER thinks that, having regard to the limited accommodation and assistance available in the present building, the departments of anatomy and physiology at Cardiff have done highly creditable work. They have prepared a number of students for the examinations in these subjects for medical degrees of the University of London and for other professional qualifications, and of these a creditable proportion have achieved considerable success. New laboratories and museums, he adds, are a necessity if Cardiff is to undertake, as it well might, the formation of a complete school of medicine corresponding to the excellent programme of study indicated by the new statute of the University of Wales. It is further noted by Sir DONALD MACALISTER that the existing hospital accommodation is already quite sufficient to furnish a clinical school. It is in process of enlargement and the arrangements are modern. The means for teaching midwifery to medical students are also at hand. "The general result of my inquiry," writes Sir DONALD MACALISTER, "is that given new buildings for the medical school and new chairs for the subjects posterior in the course to anatomy and physiology, Cardiff possesses all the requisites for a school of medicine, capable of instructing to a high degree of proficiency the aspirants to the medical degrees of the University of Wales, and thus of taking an eminent place among the professional institutions of the country." He points out also that the large international shipping trade of Cardiff makes it a natural centre for the study of tropical medicine and hygiene.

Education (Administrative Provisions) Bill.

An interesting debate took place on April 23rd on the Education (Administrative Provisions) Bill. The scope of this measure was explained in THE LANCET of March 20th, but as the debate proceeded on the assumption that Members of the House of Commons were familiar with its provisions it may be well to recapitulate its principal clauses. Clause I. provides for the medical inspection of children attending a public elementary school at the request of the Education Committee, a majority of the managers, or the head teacher of the school for the purpose of determining whether a child is suffering by reason of insufficient or improper food. By the second clause the duty is laid on the medical inspector to examine the child alleged to be suffering from underfeeding. Pending the report of the inspector the head teacher is empowered to make temporary provision for the child. An appeal to the Board of Education from the decision of the medical inspector is allowed to not less than one-sixth of the members of the local education authority. Mr. RUNCIMAN, the President of the Board of Education, took an unfavourable view of the Bill, which had the support of the Labour Party. He urged that it would be imprudent at present to interfere with the work that local authorities were doing in the direction of medical inspection and the feeding of school children. The Bill was finally rejected by 206 votes to 82.

Local Education Authorities (Medical Treatment) Bill.

The Local Education Authorities (Medical Treatment) Bill has received a second reading in the House of Commons. No opposition to it was forthcoming from any quarter of the House and accordingly it was permitted to be taken after 11 o'clock at night. It will come before a Standing Committee.

Metropolitan Ambulances Bill.

Sir WILLIAM COLLINS has introduced into the House of Commons a Bill to enable the London County Council to establish and maintain an ambulance service in London. He was one of the members of the Departmental Committee which recently considered this subject. When the Committee came to embody its findings in a report Sir

WILLIAM COLLINS differed from his colleagues in regard to the authority which should maintain the ambulance service. They proposed to confer the duty on the Metropolitan Asylums Board, whilst he was anxious that the London County Council should undertake the work.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 21ST.

The Sale of Disinfectants.

Mr. REES asked the President of the Local Government Board whether, in view of the promise made by him in June, 1907, and the statement of Professor Hewlett in the recent Milroy lectures before the Royal College of Physicians of London to the effect that during the years 1905, 1906, and 1907 28,000 gallons, 37,000 gallons, and 66,000 gallons of liquid were sold as disinfectant under the Privy Council Order of July 31st, 1900, whereby grocers and oil and colourmen were prohibited from selling disinfectants containing more than 3 per cent. of carbolic acid, the result of which, as the leading authorities all agreed, was to place a premium on adulteration and inefficiency, he would now state what steps he contemplated taking to remedy this evil.—Mr. MASTERMAN (on behalf of Mr. BURNS) replied: My right honourable friend is not empowered to fix standards of disinfectants and it does not appear to him that he could usefully take action in the matter. I may add that there is little public advantage in the domestic use of disinfectants as deodorants. Where they are employed to remove infection, they are commonly employed under the advice of a medical officer of health, or other medical man, who would be trusted to order disinfectants which are efficient.

Accidents in Mines.

Mr. GLOVER asked the Secretary of State for the Home Department whether he could state the number of serious accidents reported to the inspectors of mines during the years 1903, 1904, 1905, 1906, 1907, and 1908, and the number of non-serious accidents during 1908.—Mr. GLADSTONE furnished the following written reply: The figures of fatal and non-fatal accidents reported to the inspectors of mines during the years mentioned are as follows:—

Number of Fatal Accidents Reported.

Year.	Coal mines.	Metalliferous mines.	Quarries.	Total.
1903	1036	25	90	1151
1904	1017	31	110	1158
1905	963	43	97	1103
1906	1065	33	92	1190
1907	1162	33	88	1283
1908	1137	36	90	1263

Number of Non-fatal Accidents Reported.

Year.	Coal mines.	Metalliferous mines.	Quarries.	Total.
1903	3606	250	1373	5229
1904	3512	232	1278	5022
1905	3380	245	1193	4818
1906	3592	214	1337	5143
1907	5599	281	1459	7339
1908	5588	247	1515	7350

The figures for the year 1908 are preliminary and are subject to correction. The totals of fatal and non-fatal accidents reported were: 1903, 6380; 1904, 6180; 1905, 5921; 1906, 6333; 1907, 8622; and 1908, 8613. I have no information as to non-serious accidents in 1908. I should point out, as regards the figures of non-fatal accidents, that in the case of certain classes of accidents (e.g., accidents caused by explosion of gas or dust, or any explosive, &c.), all are required to be reported, whether causing serious injury or not, and also that the requirement as to reporting non-fatal accidents was extended by the Notice of Accidents Act, 1906, so that the figures for the last two years are not comparable with those for the preceding years.

THURSDAY, APRIL 22ND.

Inquests in County Dublin.

Mr. PATRICK O'BRIEN asked the Chief Secretary to the Lord Lieutenant for Ireland in what circumstances two inquests were recently held by the coroner for the southern division of the county of Dublin in licensed premises in Ranelagh, having regard to the fact that the Rathmines urban district council a few years ago erected a morgue on a site at the rear of the town hall, with the express view of putting a stop to the practice.—Mr. BIRRELL answered: I am informed by the coroner that in both cases the inquest was held in licensed premises because the circumstances were such as to render it advisable to have the body viewed in the place and position in which death occurred. Had the inquest been held in the Rathmines morgue, the jury would have had a considerable distance to walk to view the body which would have caused them great inconvenience and considerable delay. The coroner adds that the Rathmines morgue is a great advantage to the district and that he always avails himself of it when circumstances permit him to do so.

Unvaccinated Children in Schools.

Sir MAURICE LEVY asked the President of the Board of Education whether the managers of endowed schools, either of schools assisted out of the rates or schools entirely self-supporting, had the power to refuse admission to such schools solely on the ground of the unvaccinated condition of the applicants; whether such managers had the power to exclude a pupil, after previous admission, solely on the ground of his unvaccinated condition; and, in the event of the managers having such power, whether he would add a clause to the next Bill dealing with educational matters which would remove such a disability from unvaccinated children.—Mr. RUNCIMAN (by written answer) replied: I am advised that governors of endowed schools regulated by schemes made under the Endowed Schools Acts and Charitable Trusts Acts are not as a rule prohibited by the scheme from excluding an unvaccinated child if they consider that so to do would promote the welfare of their trust But in the case of schools, whether endowed or not, which receive grants from the Board under their secondary school regulations, the Board would not regard the absence of vaccination as a reasonable ground for the exclusion of a day pupil, though they would be unwilling to interfere with the discretion of the governors in the case of boarders.

The Medical Inspection of School Children.

In the course of a debate on the Civil Service Estimates, Colonel LOCKWOOD asked the President of the Board of Education whether there was any prospect of relief being granted in the counties in connexion with the medical inspection of school children.—Mr. RUNCIMAN replied: That is not a matter on which I am authorised to say anything at the present moment. A deputation waited on the Prime Minister recently, and his reply is the latest Government utterance upon the subject.

FRIDAY, APRIL 23RD.

Education (Administrative Provisions) Bill.

Mr. A. E. DUNN moved the second reading of the Education (Administrative Provisions) Bill. He said that by passing into law the Education (Provision of Meals) Act, 1906, the House had already approved in the most emphatic manner of the principle of feeding underfed school children, and therefore it was undesirable to go into the general question at the present time. However, in order properly to understand the matter with which this Bill dealt it was necessary to recall the fact that recently an Act of Parliament had provided for the medical inspection of school children. Now, the Bill which he submitted to the House provided, first of all, for the inspection of school children with a view to ascertain what children in the school, if any, attended in an underfed condition. It did not rest with the medical inspector to move in the first instance. The Bill dealt very gently with the local authorities in this respect. It empowered three classes of persons to set the inspector in motion. Clause 1 declared that the education committee or a majority of the managers of the school or the head teacher might request the inspector to make an inspection. Clause 2 provided that when that medical inspector had made his report, and if that report stated that there were children in the schools underfed, then it should be the duty of the local authority to feed the children. That was practically in substance the whole of the provisions of this particular Bill. There were one or two minor matters referred to in it. Under the existing law there was a limit to a halfpenny rate for the purpose of feeding school children, but under the Bill, if it was found that to feed the children a halfpenny rate was not sufficient, then that halfpenny must become more. Another useful and important provision was that the medical inspector should annually make a general report as to the condition of the scholars in a school. Surely that would be an exceedingly useful report, and he was quite sure that the education authorities would find it so. It was proposed that the report should be open to the inspection of the ratepayers generally. He contended that in making the proposals contained in the Bill he had in no ways forgotten the undoubted powers of the local education authorities. He admitted that if all local education authorities had acted as the majority of them had there would be no need for the Bill, but the House in this case had to legislate to bring the minority up to the mark. All that he now asked was that the House should confirm the principle of the Bill. That principle was that it was desirable that those children going to school in the large cities—and some of the large cities were the chief offenders—should receive proper nourishment to be in a condition to benefit from the teaching and consequently should have a chance of becoming good citizens.

Mr. TYSON WILSON, in supporting the second reading, said that during the past winter the London County Council had fed 54,000 underfed children, and the standard it adopted was exceedingly low. If a fair standard had been adopted the number of children fed would have been practically double what it was. Therefore there must be some other power than that of the education authority if the children were to be fed.

Sir FRANCIS POWELL, in moving the rejection of the Bill, said that he had served on the Select Committee dealing with the question of underfed children in 1906. There never was an investigation more complete. Now, the first consideration which occurred to him was the extreme haste with which honourable Members were now pressing this extending Bill on the consideration of the House. He found in the report of the Board of Education a remark that the legislation on this subject had been in force for so short a period that it had not had sufficient experience to make remarks upon it. The majority of local education authorities had been doing their best to carry out the medical inspection of children. In his opinion, it was premature to interfere with the Act. He argued that the tendency of the Bill would be to check voluntary effort and would diminish parental responsibility.

Viscount MORPETH seconded the motion for the rejection. He said that he opposed the Bill because he believed that discretion ought rightly to be placed on the local authority. If there was to be a discretion, surely it would be more properly vested in the hands of a local authority than in the hands of a single medical man. Although he had the highest respect for the medical profession, he thought it would be a dangerous step to give them full control and power in this matter without check by the common-sense of laymen, whose decision should always be final. Clause 2 provided that "the medical inspector must thereupon report his decision to the local education authority." That was to say that his decision was to be final and binding. Under those circumstances surely it was a misnomer to call the local authority an authority, because it had no authority at all in the matter.

Sir WILLIAM COLLINS said that he was inclined to share the view that the Bill would not add to the dignity of the medical profession if the

medical officers were put into the position into which the Bill proposed to put them. After reviewing certain questions connected with the feeding and medical inspection of school children, he asked what was going to be done with the results which medical inspection had exposed to view. Three years ago, when these matters came under the review of the House it was not contended that medical inspection should lead to such a result as the treatment of children at the public expense. Those who were working on educational authorities knew very well that very delicate questions were arising as to what was to be done with the cases of physical defect and disease which were exposed as the result of medical inspection—whether they were to be referred to hospitals, whether the parent was to be required to have the necessary treatment carried out, or whether school clinics and hospitals ought to deal with them. This was a question calling for most serious investigation at the present moment, and before any legislation took place he hoped that some committee or commission would be set up to look into the whole question thoroughly. The subject of medical inspection required very much more careful consideration and treatment than it had yet received, and might require, not only administrative, but legislative changes. The questions of the feeding of school children and medical inspection hung together, and the House of Commons ought not to be asked to amend legislation passed so recently as 1906 and 1907 without far larger inquiries than had hitherto taken place. He asked honourable Members to remember that they ought to be guided, not only by experience, but also by inspiration proceeding from the head as well as from the heart.

Sir JAMES DUCKWORTH did not think that medical officers would suffer any loss of dignity if they had to attend to the feeding of the children, which in his judgment was the most important thing of all, for if the body was not fed the services of medical men would not avail much. He was greatly in favour of the Bill.

Mr. H. C. GOOCH did not consider that the Board of Education had an adequate medical staff at present to deal with the appeals which would come to it under this Bill. In his view the whole purport of this measure was to impose on local authorities a large expenditure for the feeding of children which Parliament had stated expressly was a voluntary work.

Mr. RUNCIMAN (the President of the Board of Education), replying to the debate at a subsequent stage, said the proposals in this Bill might well be discussed on their merits. It had been introduced with the idea that the legislation passed in 1906 had proved inadequate for the needs of the country. That had not been proved that afternoon However, he thought that he was justified in discussing the Bill clause by clause, and when he did that he could not express approval of it. Clause 1 provided for the jurisdiction of three sets of persons, and he could not help thinking that was an unworkable provision. In the Act of 1906 it was laid down that food should be provided for children if, by reason of the lack of food, the children were unable to take full advantage of the education provided for them. This Bill did not limit the supply to these cases. It recognised an entirely novel kind of case —viz., that of improper food. It was difficult to discover that a child was suffering from a lack of food, and still more difficult to discover that a child was improperly fed. It would pass the wit of man to discover that. Everybody knew that improper feeding was often not caused by poverty but by ignorance. The Bill would provide for the provision of food not only throughout the school days but throughout the holidays. That would not be educational advancement but Poor-law relief. Under Clause 2 the medical officer had to determine whether a child was insufficiently or improperly fed. There was no provision as to who the medical officer was to be, but not only he, but also the head teacher, was to undertake this duty. The head teacher was apparently to have a sum of money in his hands to disburse for the provision of food in certain cases. That would open the door to waste, and in many parts of London at any rate it would make the position of the head teacher almost intolerable. The Bill further provided for the elimination of the halfpenny limit in the rate. The necessity for exceeding that limit had not been proved that afternoon, and in many cases it had been found to be totally unnecessary. The machinery of the Bill actually provided in almost every place for what he might call the democratic element being overridden by the official element. That was certainly not a well-devised piece of machinery and not one to which he could give his assent. On the general question of medical inspection, he said that during the last 12 months the Board of Education had had great difficulties in connexion with its initiation. Everyone knew the fear of local authorities that medical inspection would become costly. Much of that fear was grossly exaggerated. He had sometimes had estimates sent to him—they were purely estimates and nothing else—which ran the cost up to 5s. per child. He believed it would cost nothing of the kind, but even if it did it would be well-spent money. The money which had already been spent on medical inspection was bearing good fruit, but it could not be yet said that the system was established. It was only in its initiatory stage. The efficient organisation of medical inspection would undoubtedly contribute largely to the good working of the Act of 1906. Even that inspection itself had had a very short trial. Many local authorities had not yet got their machinery in working order, and although medical inspection had come to stay—quite clearly it had behind it the whole force of public opinion—he could not say that at the present moment it was entirely out of danger. The House ought not to embarrass the good work that was being done by a medical inspection by adding a further and an unnecessary burden to the local authorities. He should like to express his warm appreciation of the diligence and public spirit with which many local authorities tackled the difficult administrative problems with which they had been confronted with regard to medical inspection. He would regard any interruption of that experiment or any great disturbing element in it with great misgiving, if he thought it likely that local authorities would be checked in that good work. A great deal must be left to the discretion of the local authorities who knew public opinion and how far they could carry it along with them. The proposals put forward in the Bill were really in the nature of Poor-law proposals. If the Act of 1906 was made compulsory and extended it meant that it must of necessity compete with the Poor-law. Already it was doing so, for some of the guardians, when they heard that a child was receiving free meals from the local education authority, at once stopped or reduced the outdoor relief which was given to the parents. This work must of necessity overlap. Honourable Members knew that the Government hoped to devote a portion of next session to the reform and re-organisation of public assistance. Let not the House add more to the conflict and confusion which already embarrassed Poor-law reformers. He was afraid, therefore, that he could not support the Bill which he believed would do harm in present circumstances. Honourable Members should leave to local public opinion and to local authorities the reasonable liberty which they had under the Act of 1906 and under which on the whole they had acted well.

On a division the Bill was rejected by 206 votes to 82.

MONDAY, APRIL 26TH.

Uncertified Deaths in Ross-shire and Inverness-shire.

Mr. WEIR asked the Lord Advocate whether, in view of the fact that during the years 1903-07 there were 2915 uncertified deaths in Ross-shire and Inverness-shire, he would state what action the Local Government Board for Scotland proposed to take to secure certification of deaths in the Highlands and Islands.—Mr. URE replied: No action can be taken without legislation, which is not at present in comtemplation by the Government.

Scottish Poor-law Medical Officers.

Mr. CATHCART WASON asked the Lord Advocate whether he was aware that practically all the Scottish Members supported the proposal to put Scottish Poor-law medical officers in the same position as regards right of appeal as their brethren in England and Ireland, and whether the Government would afford facilities for the second reading to the Local Government (Scotland) Bill in order that the case might be duly considered in Committee.—Mr. URE answered: I am aware that the Bill referred to receives considerable support. Parish councils, however, are by no means unanimous in the matter, and without evidence of more general concurrence on their part the Government are not prepared to adopt the course which my honourable friend proposes.

TUESDAY, APRIL 27TH.

Children and Public-houses.

Mr. RENDALL asked the Secretary of State for the Home Department whether his attention had been called to the practice of certain parents, since the coming into operation of the Children Act, of taking their children to the doors of public-houses, where liquor was handed to the parents by their friends; and whether, seeing that when such practices took place in the late hours of the evening and in the vicinity of such parents' homes cruelty was inflicted upon the children so exposed, he would circularise the authorities controlling the police exhorting them to prosecute in such cases.—Mr. HERBERT SAMUEL (on behalf of Mr. GLADSTONE) replied: The Secretary of State's attention has been called to this matter. Merely to keep a young child at the door of a public-house would not in itself amount to cruelty, but it might be done under circumstances and conditions which would cause unnecessary suffering and thus constitute an offence. If facts came to the knowledge of the police which justify them in proceeding against a parent the Secretary of State has no doubt that they will be prepared to take action, and he does not think it necessary to issue a circular on the subject.

Confinements in Prison.

Mr. SNOWDEN asked the Secretary of State for the Home Department how many births took place in prisons in England and Wales during the years 1907-08; how many women were released during the same period from prison on account of their approaching confinement; and whether the birth was registered as having taken place in prison.—Mr. GLADSTONE (by written answer) replied: 43 children were born in prison in the year 1907 and 42 in 1908. In 1907 73 women were released before the termination of their sentences on account of approaching confinement, and in 1908 76. Births in prisons are reported by the governors direct to the local registrars, who have received special instructions from the Registrar-General whereby the description of the place of birth in such cases is so entered as to avoid mention of the word "prison" in the certificate.

WEDNESDAY, APRIL 28TH.

The Sleeping Sickness in East Africa.

Mr. REES asked the Under Secretary of State for the Colonies what steps had been taken under the agreement and protocol between England and Germany with regard to sleeping sickness to preserve Nyassaland from this disease.—Colonel SEELY replied: The agreement in question related only to Uganda and German East Africa. So far as Nyassaland is concerned, I am glad to say that the extensive investigations which are being made in the Protectorate have failed, up to the present time, to reveal the presence of the tsetse fly which transmits the disease. These investigations will be continued, but there is good reason to hope that Nyassaland is not exposed to the risk of an epidemic similar to that which has wrought such havoc in Uganda.

BOOKS, ETC., RECEIVED.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

A History of the Reading Pathological Society. By Jamieson B. Hurry, M.A., M.D., President of the Society. Price 7s. 6d. net.

Rational Immunisation in the Treatment of Pulmonary Tuberculosis and Other Diseases. Comprising Paper read before the Royal Society of Medicine, March, 1909. By E. C. Hort, B.A., B.Sc., M.R.C.P. Price 3s. 6d. net.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.

A Handbook for Midwives and Maternity Nurses. By Comyns Berkeley, B.A., M.B., B.C. Cantab., M.R.C.P. Lond., M.R.C.S. Eng. New and enlarged edition. Price 5s.

CHURCHILL, J. AND A., London.

Text-book of Nervous Diseases and Psychiatry. By Charles L. Dana, A.M., M.D., LL.D. Seventh edition. Price not stated.

Practical Physiological Chemistry. By Philip B. Hawk, M.S., Ph.D. Price 16s. net.

COLLINGRIDGE, W. H. AND L., London.

Lawns and Greens: Their Formation and Management. By T. W. Sanders, F.L.S., F.R.H.S. Price 1s. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Sprains and Allied Injuries of Joints. By R. H. Anglin Whitelocke, M.D., M.C. Edin., F.R.C.S. Eng. Price 7s. 6d. net.

Graphic Methods in Heart Disease. By John Hay, M.D., M.R.C.P. With an Introduction by James Mackenzie, M.D., M.R.C.P. Price 7s. 6d. net.

Common Disorders and Diseases of Childhood. By George Frederic Still, M.A., M.D. Cantab., F.R.C.P. Lond Price 15s. net.

Inborn Errors of Metabolism. The Croonian Lectures, delivered before the Royal College of Physicians of London in June, 1908. By Archibald E. Garrod, D.M., M.A. Oxon., F.R.C.P. Price 3s. 6d. net.

FUNK AND WAGNALLS COMPANY, London and New York.

Parcimony in Nutrition. By Sir James Crichton-Browne, M.D., LL.D., F.R.S. Price 3s.

GIEVE, MATTHEWS AND SEAGROVE, LIMITED, London.

How to Become a Naval Officer. With Introduction by Admiral the Hon. Sir E. R. Fremantle, G.C.B., C.M.G., Rear-Admiral of the United Kingdom. Revised edition. 1909.

HIRSCHWALD, AUGUST, Berlin.

Das Problem des Lebens in kritischer Bearbeitung. Von Prof. Dr. Berthold Kern. Price M.14.

Kompendium der Röntgen-Therapie. Von Dr. H. E. Schmidt. Zweite vermehrte Auflage. Price M. 3.

Deszendenz und Pathologie. Von D. von Hansemann. Price M. 11.

LEWIS, H. K., London.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. (Aberdeen). Vol. I. Fourth edition, revised and enlarged. Price 14s. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

Appendicitis and Other Diseases of the Vermiform Appendix. By Howard A. Kelly, M.D. Price 25s. net.

Essentials of Medicine. By Charles Phillips Emerson, M.D. Price 8s. 6d. net.

International Clinics. Edited by W. T. Longcope, M.D., Philadelphia, with Collaboration. Price £1 15s. net per set of 4 vols.

LIVINGSTONE, E. AND S., Edinburgh.

The Students' Pocket Prescriber. By H. Aubrey Husband, M.B., C.M., B.Sc., F.R.C.S.E., M.R.C.S., L.S.A. New edition. Price 1s. 6d. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Lectures on the Use of Massage and Early Movements in Recent Fractures. By Sir William H. Bennett, K.C.V.O., F.R.C.S. Fourth edition. Price 6s.

MACMILLAN AND CO., LIMITED, London.

Home Nursing. With Notes on the Preservation of Health. By Isabel Macdonald, Cert. Roy. Inf. Edin., M.R.B.N.A., A.R. San. I. Price 2s. 6d. net.

The Faith and Works of Christian Science. By the Writer of "Confessio Medici." Price 3s. 6d. net.

Severest Anæmias, Their Infective Nature, Diagnosis, and Treatment. By William Hunter, M.D. Edin. Vol. I. Price 10s. net.

MASSON ET CIE, Paris.

Précis de Pathologie Exotique. Par E. Jeanselme et E. Rist. Price Fr.12.

NELSON, THOMAS, AND SONS, London, Edinburgh, Dublin, and New York.

The Children's Charter. A Sketch of the Scope and Main Provisions of the Children Act, 1908. Containing Suggestions for Social Workers throughout the Kingdom. By M. K. Inglis. With a Preface by the Right Hon. Herbert Samuel, M.P., Under Secretary of State for the Home Department. Price 6d. net.

REBMAN, LIMITED, London.

Bier's Text-book of Hyperæmia as applied in Medicine and Surgery. By Professor Dr. August Bier of Berlin. Only authorised Translation from the Sixth German Revised Edition. By Dr. Gustavus M. Blech. Price 12s. 6d. net.

The Surgery of the Ear. By Samuel J. Kopetzky, M.D. Price 16s. 6d. net.

SOCIETÀ EDITRICE LIBRARIA, Milano.

Il Ricambio Materiale nelle Anemie Gravi. Dott. Gustavo Padoa. Price L.8.

SPRINGER, JULIUS, Berlin.

Ueber die Wirkungsweise der Gaumen- und Schlundmuskulatur bei angeborener Gaumenspalte. Von Hofrat Dr. med. C. Röse. Price M. 1.

UNIVERSITY PRESS, Cambridge. (CAMBRIDGE UNIVERSITY PRESS WAREHOUSE, London.)

Mendel's Principles of Heredity. By W. Bateson, M.A., F.R.S., V.M.H. Price 12s. net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Kompendium der topischen Gehirn- und Rückenmarksdiagnostik. Von Robert Bing, Nervenarzt. Price M.6.

VIGOT FRÈRES, Paris.

Formulaire. Consultations Médicales et Chirurgicales. Par MM. G. Lemoine et E. Gérard, avec la Collaboration de J. Vanverts. Quatrième Edition, conforme au nouveau Codex, 1908. Price Fr.7.

L'Asthme. (Étiologie, Pathogénie et Traitement.) Par le Dr. R. Moncorgé. Price Fr.4.

Hygiène Oculaire de la Première Enfance. Par le Dr. Etienne Ginestous. Price Fr.2.

Thérapeutique Médicale et Médecine Journalière. Par G. Lemoine. Cinquième Édition. Price Fr.16.

VOGEL, F. C. W., Leipzig.

Die Röntgenuntersuchung der Brustorgane und ihre Ergebnisse für Physiologie und Pathologie. Von Privatdozent Dr. Hans Arnsperger. Aus der Medizinischen Klinik in Heidelberg. Mit einem Vorwort von Professor Krehl in Heidelberg. Price M.12.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BOYD, SIDNEY, M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Belgrave Hospital for Children and Surgeon to the Mildmay Hospital, Bethnal Green.

DE SOUZA, D. H., M.D., M.R.C.S., L.R.C.P., has been appointed House Physician to University College Hospital.

FERNIE, F. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stone District of the county of Stafford.

HANCOCK, W. ILBERT, F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital (Moorfields).

HOGARTH, ROBERT GEORGE, F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 18, and to be attached more particularly to Nottingham, Newark, and Bingham County Courts.

KAUFFMANN, OTTO JACKSON, M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 26.

MAITLAND, LYTTON PELHAM, M.B., B.S. Lond., has been appointed Medical Registrar to Charing Cross Hospital.

RUTHERFORD, JAMES M., M.B., C.M., M.R.C.P. Edin., has been appointed Senior Resident Physician to Brislington House, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, &c.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and attendance.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for the Ophthalmic and Ear and Throat Departments. Salary £60 per annum, with board, residence, and laundry.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, &c.

CROYDON GENERAL HOSPITAL.—Medical Officer for Diseases of the Ear, Nose, and Throat.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Physician. Salary at rate of £60 per annum with board, residence, and washing.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, and lighting.

FOLKESTONE, VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL HOSPITAL.—Medical Officer in Charge of the X Ray and Electrical Department. Salary 25 guineas per annum.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £50, with board and residence.

HUDDERSFIELD INFIRMARY.—House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, and washing.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Two House Surgeons. Salaries at rate of £65 per annum. Also Senior. Salary £80 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

LEEDS GENERAL INFIRMARY.—House Physician for six months. Board, lodging, and washing provided.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

MIDDLESEX COUNTY ASYLUM, Napsbury, near St. Albans.—Fourth Assistant Medical Officer. Salary £160 per annum, with apartments, board, washing, and attendance.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon for six months. Salary at rate of £30 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board and residence.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM, Gosforth.—Second Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Medical Officer in Charge of Electrical Department. Salary £50 per annum.

RAINHILL, NEAR LIVERPOOL, COUNTY ASYLUM.—Assistant Medical Officer. Salary £4 4s. per week, with apartments and board.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Curator of the Museum, Assistant to the Clinical Pathologist, Clinical Assistant in the X Ray Department, and Assistant Anæsthetists (all females).

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

ROYAL NAVAL MEDICAL SERVICE.—Examination for 15 Commissions.

ST. GILES, CAMBERWELL, WORKHOUSE, Constance-road, East Dulwich.—Locum Tenens for the Medical Officer. Salary at rate of 4 guineas per week, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SCARBOROUGH, BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

SHEFFIELD, ROYAL INFIRMARY.—Assistant House Physician. Salary £60 per annum, with board and residence. Also Honorary Ophthalmic Surgeon.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

STAFFORDSHIRE EDUCATION COMMITTEE.—Assistant School Medical Inspector. Salary £250 per annum, rising to £300.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.—House Surgeon, unmarried. Salary £160 per annum, with residence, board, and washing.

SUFFOLK DISTRICT ASYLUM, Melton.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, attendance, and laundry.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer as Locum Tenens. Salary £3 3s. per week, with apartments and board.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and service.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Preston (West), in the county of Lancaster; and at Abertillery, in the county of Monmouth.

Births, Marriages, and Deaths.

BIRTHS.

CLOGG.—On April 20th, the wife of H. S. Clogg, M.S., F.R.C.S., o 143, Harley-street, W., of a son.

PARKS.—On April 23rd, at "Easedale," Walton-on-Thames, the wi e of Norris J. Parks, L.D.S., of a daughter.

MARRIAGES.

BARNES—BARTLETT.—On April 20th, at Barnham Broom Church, Norfolk, Henry Edgar Barnes, M.D., to Isabel Florence, younger daughter of the Rev. J. E. P. Bartlett, rector of Barnham Broom.

GARDNER—RAMBAUT.—On April 28th, at Oxon Church, Shrewsbury, by Rev. W. D. Fletcher, assisted by the Rev. St. Aubyn Arkwright, Dr. Henry Willoughby Gardner, of Shrewsbury, son of the late Henry Gardner of Liverpool, to Mary Louisa, younger daughter of the late Rev. Edmund F. Rambaut of Blackrock, co. Dublin.

REID—CLAPPERTON.—On April 21st, at the Church of St. Mary-le-bone, London, Archibald Douglas Reid, M.R.C.S., L.R.C.P., to Annie Allan, daughter of the late John Clapperton and of Mrs. Clapperton of Greenock.

ROWLETTE—DAY.—On April 22nd, at Greystones Church, Robert James Rowlette, M.D., to Gladys Muriel, eldest daughter of the late Russel Camper Day, of the Secretary's Office, G.P.O., Dublin, and of Mrs. Camper Day.

WHITTING—CASSELS.—On April 24th, at St. Mark's, Pennington, Hants, Robert Everard Whitting, M.D., to Morna Helen, second daughter of Y. A. Cassels, Esq., of View Park, Broomhill, Glasgow.

DEATHS.

RANDELL.—On April 22nd, at Vanbrugh Park, Blackheath, Edward Benjamin Randell, M.R.C.S. Eng., L.D.S., in his 73rd year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE MISUSE OF PRESCRIPTIONS.

WE have on previous occasions commented upon the various misuses to which prescriptions may be put. We now learn that the pharmacists of Philadelphia have drawn up a draft set of rules, which they have submitted to the American Pharmaceutical Association, as being likely to meet with the approval of the medical profession. Among these rules are the following:—

First.—The prescription is an utterance of the prescriber, who alone should direct and control its employment. It should, whenever practicable, carry the name of the patient, and if a minor, the age in years and the date when written.

Second.—The pharmacist who prepares the medicine should retain the prescription for reference, as a record of his services and for a certain limited period, not less than five years, for the protection of the prescriber, himself, and the patient. The physician, when delivering the written prescription, should impress upon the patient that it is an order for medicines, subject to conditions and limitations.

Third.—The medicine prescribed should not be supplied more than once on the same prescription: (1) if ordered by the prescriber "not to be repeated" (N. rep.); (2) if containing medicinal substances commonly called narcotics, or "habit-forming" drugs; (3) if called for by some person known not to be the original holder thereof; (4) a declaration to this effect should appear on the prescription blank over the doctor's signature.

Fourth.—No copy of a prescription shall be furnished to the patient: (1) if the physician has declared such prescription non-renewable; (2) if it contains a narcotic or a habit-forming drug.

For the purpose of carrying out these rules the pharmacists of Philadelphia have drawn up a special prescription blank bearing, in addition to the usual printed matter, the words: "Note.—The conditions under which this prescription is written will be found on the reverse side hereof." The reverse side of the blank contains the inscription: "This prescription is written for the party whose name appears thereon, for the present indications only; hence it is not to be renewed without my written consent and no copy of same is to be given. The pharmacist compounding it will kindly preserve same on his prescription file." It seems to us that subsection (3) of the third rule will be impossible to carry out in its entirety—namely, that no medicine shall be supplied more than once on the same prescription, "if called for by some person known not to be the original holder thereof." Surely, the American pharmacists do not expect a patient suffering from typhoid fever or pneumonia to get out of bed and call for his medicine! We suppose that the provision is inserted to checkmate the persons, and they are of common occurrence, to whom some would-be kind friend says, "Oh, try my medicine, it's done me *so* much good. I'll give you Dr. Sangrado's prescription." Such persons should undoubtedly be put down, but for all that the provision quoted needs alteration. On the whole, however, the rules seem most sensible. We would add that it is obviously open to any medical man to endorse any prescription "Not to be repeated," or "Repeat once or twice only," as the case may be.

THERAPEUTICS EXTRAORDINARY.

THE historico-romantic school of fiction affords many instances of warriors who have received a dozen gaping wounds in battle against stupendous odds being won back to life by the virtue of an elixir prepared by a fair lady cunning in the healing of heroes, or perhaps by some mysterious hermit in whose forest cell the wounded one awakes to consciousness. The annals of sport hold more credible, if less creditable, stories of horses endowed by the administration of a stimulant with an artificial endurance which wins their owners an ill-earned race. But we are inclined to think that neither the pages of history nor of fiction can produce a more striking account of unorthodox dosing than appeared in the police-court reports of the *Daily Express* on April 19th. We read there that Mr. Bodkin, whilst conducting a prosecution of two men named Clark and Norgate for obtaining money under false pretences, told the following story about a convict named Harcourt, upon whose evidence the proceedings were based. "Harcourt wished to obtain a further substantial sum. ..... Accordingly, he underwent examination by a doctor representing a life insurance company, who refused to pass him. When this became known Clark reminded Norgate of a doctor who had prepared a wonderful prescription for him. Clark and Harcourt went to the doctor and obtained the prescription, which was made up by a West-end chemist." Mr. Bodkin proceeded to remark, according to the report before us: "That prescription is now to be seen in the chemist's books, but I do not propose to make it public. It is certainly a wonderful thing, because after he had been stiffened and strengthened by this extraordinary tonic Harcourt easily satisfied the medical man who examined him on behalf of another insurance office. Harcourt was insured, and further sums were obtained from Mr. Higgins on the security of the policy.' The magistrate has more faith than we have in the virtue of the

tonic, but we trust that the West-end chemist who is the repository of this therapeutic treasure will second Mr. Bodkin's laudable reticence and not divulge the secret of a remedy which will add another terror to the perplexities of the medical referees of insurance companies, however great the temptation to launch a new patent medicine on the public. Yet it would be interesting to hear whether the latest elixir of health masked a murmur in Harcourt's aortic valves or merely abstracted some albumin from his urine.

A CURIOUS ACCIDENT.

A CORRESPONDENT (a medical man) sends us an account of a curious accident which occurred recently on golf links in the south of England. A player whilst in the act of striking a ball managed to swallow "a quarter of a lighted cigarette" with no ill-effects. The eating of lighted candles, made, we believe, of apples with "wicks" cut out of almonds and soaked in oil, was a favourite performance of old-fashioned conjurers, and the consumption of chocolate cigarettes is doubtless still practised by the young. But the swallowing of lighted tobacco is not so safe a performance, and we congratulate the golfer on having taken no harm. Considering the concentration, both muscular and mental, with which some golfers make their drives, and the frequency with which they balance lighted cigarette ends between their lips while striking, we can conceive that this is not the first time that the accident has occurred.

AXILLARY AND RECTAL TEMPERATURES IN NEUROTIC SUBJECTS.

FROM a series of observations made by M. Erlandsen, a pupil of Professor Gram of Copenhagen, it would appear that there is no greater difference between the axillary and rectal temperatures in hysterical and other neurotic subjects than that which ordinarily obtains in healthy persons. This increase of difference was suggested by Dr. Hallager, a Danish physician, some years ago as an aid to diagnosis, and Professor Gram felt anxious that the value of the so-called Hallager's sign should be tested. M. Erlandsen therefore examined 89 patients suffering from hysteria, neurasthenia, traumatic neurosis, paralysis agitans, sciatica, chorea, and exophthalmic goitre, with great care and extremely sensitive thermometers. One of the first things that struck him was that a higher reading was obtained when the thermometer was inserted in the rectum to a depth of three centimetres, when the bulb was grasped by the external sphincter, than when it was inserted to a depth of seven or eight centimetres. The lowest difference between rectal and axillary temperatures was 0·12° F. and the highest 0·32° F., the mean being 0·14° F. There was only a small difference in persons having a rigid perineum—e.g., children, virgins, and adult men, the maximum occurring in multipara. In the 89 pathological cases M. Erlandsen found, when he took the observations himself, that there was a mean difference between the axillary and rectal temperatures of 0·68° F., which figure agrees fairly well with those given by different authorities, which vary from 0·77° to 0·93° F. Another rather important point is mentioned, and that is, that in fat subjects there is more difference than in thin persons between the axillary and rectal temperature, the reason being, according to M. Erlandsen, that the axillary space in fat persons is more isolated from the central parts of the body by the layer of adipose tissue being thicker. Be the explanation what it may, he found by dividing his subjects into three classes—fat, medium, and thin—that the mean differences between the axillary and rectal temperatures were 0·918°, 0·65°, and 0·59° in the three cases respectively. M. Erlandsen's original paper appeared in *Hospitalstidende* for Nov. 25th, 1908.

R.A.M.C. points out that in the various advertisements of German "Cure Establishments" and Medical Institutes the tariff for baths and residence is never mentioned. He has found that in one well-known German spa at least the rates are very high, and inquires whether there are any such institutions offering a tariff comparable to the lower prices of English "hydros." It must be remembered that the treatment at such foreign institutions is of a special kind, and that the majority of people who proceed abroad for "cures" belong to the well-to-do classes. Both of these circumstances naturally tend to keep the level of continental "cure-house" charges at a high average, but we should be glad to hear of any properly vouched for establishments offering specially moderate terms which may be of interest to our correspondent and to other medical men.

Moribund has raised an interesting point with which we will deal in an early issue.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Leeds Mercury, Jersey Evening Post, Liverpool Express, Weekly Despatch, Dundee Advertiser, Evening News, Newcastle Journal, Daily News, Northern Daily Mail, Birmingham Post, Edinburgh Evening Despatch, Glasgow Herald, Dublin Times, Midland Evening News, Walsall Advertiser, Yorkshire Observer, Birmingham Despatch, Aberdeen Evening Express, Morning Advertiser, Nottingham Guardian, &c.*

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Paper:
Dr. Hale White and Dr. Eyre: Vaccine Treatment.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, Atwood Thorne): at 5 P.M.

Dr. Dundas Grant: Two Cases.
Dr. Donelan: (1) Laryngeal Tuberculosis in a Man aged 43; (2) Deflection of Septum in a Boy aged 13: Question of Resection; (3) Recurrent Occlusion of Naris.
Mr. Herbert Tilley: Chronic Suppuration in the Left Sphenoidal Sinus; Recovery.
Dr. Jobson Horne: Fixation of Right Vocal Cord, of Intermittent Occurrence, in a Man aged 40.
And other Cases.

SATURDAY.

OTOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Hunter F. Tod): at 10 A.M.

Cases and Specimens:
Mr. C. C. West: Further notes on Case of Carcinoma of the Ear.
Dr. Adolph Bronner: Cholesteatoma of the Ear treated with Enzymol.
Mr. R. Lake: Case of Epileptiform Attacks of Labyrinthine Origin, and Other Cases.
Mr. Hunter Tod and Mr. A. L. Whitehead will also show Cases and Specimens.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cord Specimens will be shown by Major R. H. Elliot, I.M.S., Mr. S. Stephenson, Mr. G. W. Roll, and others. 8.30 P.M., Dr. G. Carpenter: A Short Note on Tubercle of the Choroid with an Account of a Recent Case.—Mr. M. Davidson and Mr. A. Lawson: A Case of Spring Catarrh Treated and Cured by Radium.—Mr. R. R. Cruise: The Abuse of Atropin in Refraction Work.—Mr. S. Mayou: On the Disappearance of the Iris from the Papillary Area following Injury.—Mr. W. H. H. Jessop: The Report of the International Committee on the Unification of the Notation of Visual Acuity and of the Meridians of Astigmatism.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Dr. S. A. Bontor: The State Regulation of Marriage.—Mr. B. Harman: A New Test for Vision, the Diaphragm Test.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. Keith: On Specimens illustrating Malformations of the Neck. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. W. Evans: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. Cautley: The Treatment of Broncho-Pneumonia.
TUESDAY.—4 P.M., Sir W. Gowers: Clinique (Medical). 5.15 P.M., Lecture:—Dr. G. Pernet: Feigned Eruptions.
WEDNESDAY.—4 P.M., Mr. J. Cantlie: Clinique (Surgical). 5.15 P.M., Lecture: Mr. Bland-Sutton: The Baneful Effects of Pregnancy on Uterine Fibroids.
THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. H. Savage: The Feeble-minded and their Care.
FRIDAY.—4 P.M., Mr. S. Stephenson: Clinique (Eye).

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds). Gynæcological (Dr. A. E. Giles).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. G. N. Biggs: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. J. Mackenzie.
WEDNESDAY.—3 P.M. Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration: Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx.
FRIDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.)

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 29th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 23	29·76	S.W.	0·13	109	62	49	50	54	Cloudy
,, 24	29·59	S.W.	0·12	103	63	50	53	55	Cloudy
,, 25	29·71	S.W.	...	121	59	46	49	56	Cloudy
,, 26	29·75	S.W.	...	121	64	46	50	55	Fine
,, 27	29·66	S.W.	0·08	106	57	50	50	53	Cloudy
,, 28	30·00	W.	0·37	116	62	45	48	50	Cloudy
,, 29	29·89	W.	0·02	116	56	45	45	49	Cloudy

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